



THOMAS PAINE.
Etching circa 1790-1809 by
John Kay (1742-1826).

THE UNKNOWN THOMAS PAINE.

“Tyranny, like hell, is not easily conquered; yet we have this consolation with us, that the harder the conflict, the more glorious the triumph. What we obtain too cheap, we esteem too lightly: it is dearness only that gives every thing its value. Heaven knows how to put a proper price upon its goods; and it would be strange indeed if so celestial an article as freedom should not be highly rated.”
~ *The Crisis*, 23 Dec. 1776.

In choosing the title for this chapter in our series, I don't quite mean to insinuate that I will tell you *who* the unknown Thomas Paine was. Instead, I mean simply to raise with you that there would seem to be much of significance about Thomas Paine that we don't quite know about, and that would sufficiently explain him. For one thing, was it merely his gift for writing that catapulted him to such influence and prominence as the everyman of liberty and the spokesperson for human freedom? Not everyone, even among American radicals, was especially fond of him. Some predictably resented him as a mere opportunist and leveler. And one wonders if even those who implied they were fond of him, such as William Cobbett (and who ended up losing Paine's unburied body as a result of a putative to memorialize him)¹ weren't possibly less than sincere, or else actuated by unknown ulterior motives or pressures.

Thomas Burke, a congressional delegate from and later governor of North Carolina, wrote of Paine in July 1779:

...But sure, no mortal Mother did thee bear;
Rather a Colic in the *Prince of Air*,
On dusky Pinions borne o'er Aether's Plain,
Expell'd thee from him with a griping Pain.
For as *Minerva*, Queen of Sense Uncommon,
Ow'd not her Birth to Goddess or to Woman
But softly crept from out her Father's Skull
At a small Crack in 't, when the Moon was full --
So you, great *Common Sense*, did surely come
From out of the Crack in grizzly *Pluto's* Bum.

Such as thy Origin, such be thy Fate,
To war 'gainst Virtue with a deadly Hate;
By daily slanders earn thy daily Food,
Exalt the Wicked and depress the Good,
And having spent a lengthy life in Evil,
Return again unto they parent Devil.²

¹ Cobbett in the 1790s had actually denounced Paine in pamphlets on several occasions.

² From "An Epistle," and that appeared in the *Pennsylvania Evening Post*, July 16, 1779. *The Poems of Governor Thomas Burke of North Carolina*, State Dept. of Archives and History, Raleigh North Carolina (1961), p. 51.

True, Burke had personal reason to be offended by him. The latter had been appointed by Congress Secretary of Foreign Affairs (in reward for his services as the author of “Common Sense” and “The Crisis”), and in the course of pursuing his duties, he’d actively sought to bring Silas Deane up on charges of graft, embezzlement and all around duplicity while Deane was acting as one of America’s procurers of funds and supplies from France and Europe. In the course of making his case, Paine, in April 1779, accused some members of Congress of concealment and covering on Deane’s behalf; one of whom was Burke. And yet if Paine was seen by some as a *very devil*, as well as being so exceptionally candid *and* influential -- so much so as to have changed the course of world affairs -- how was it possible, one wonders, that he survived as long as he did?

Not all “demons” act with malignant hostility. Some are motivated by lust and infatuation, and, indeed, delight in molesting and tormenting others as a sort of past time for their own personal gratification. It seems, upon reflection and in retrospect, that Paine may have been the victim of such a one; with one of the ironic consequences of which being that he strengthened and shielded Paine; so that he might all the better *use* him. Paine, while right in his heart, was sometimes rather a fool in his thinking; insofar as, for example, he too freely and without greater caution attacked and blamed traditional government and organized religion. If either government or organized religion is ever to blame, it is for the reason of those who comprise its majority and or leading members who are corrupt or false. It does not follow, therefore, that because the leaders and members of a government (including monarchy) or church are corrupt or false that the institutions of government or organized religion themselves are inherently or necessarily corrupt and false. We might well say, for instance, that so-and-so is a poor painter or an awful musician. But it does not therefore follow that the fault for this lies in painting and music themselves. And this is the very fallacy Paine in his criticism of traditional government and religion fell into. His error further becomes all the more egregious when we realize he was unable to take into account the possible infiltration of government and church -- not to mention populist movements such as he himself espoused -- by criminal spirit people posing as authority and posing as divinity; and which spirit people cowardly, childish, irrational, and ignorant persons took for being the real thing. In being unaware of or ignoring such, it could be argued he was unwittingly playing right into their hands; hence their empowering and protecting him.

In a word, per chances Paine *might* be included among the “dupes of the preternatural.” If so, poor Paine; who himself, we have no reason to doubt, was sincere in his desire to better the lot of individual and collective humanity!

Yet even if we grant, for the sake of argument, that Paine was so duped, this should not in the least detract from his otherwise and elsewhere praiseworthy efforts and contributions, or lessen our admiration for his aptitude for composition. It was Paine as much or more than anyone else who made America’s cause humanity’s; and for this he ought ever to be honored. And it was owing in part to his not being a native American, combined with his skill as an author, that made this possible. There was hardly anyone else to play this role, and it is this that makes him so peculiar and unique.

As well a pamphleteer, Paine was gifted in other ways, including as a writer of songs and verse. In proof of this, the ensuing are some selections of his in this vein. In addition and following which, we insert his very strange “The Causes of the Yellow Fever, and the Means of Preventing It in Places Not Yet Infected with It,” from June 1806. Were it not he himself was writing in earnest, the no little curious tract reads like one of Edgar Allen Poe’s gothic satires, and in which we have the bizarre scenario of Paine and Gen. Washington (the latter accompanied by some officers) in 1783; carrying out unusual scientific experiments from the seat of a scow moored in a creek near Princeton.

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### **LIBERTY TREE.**<sup>3</sup>

*A Song, written early in the American Revolution.*

*Tune -- The gods of Greece.*

In a chariot of light, from the regions of day,  
The Goddess of Liberty came.  
Ten thousand celestials directed her way,  
And hither conducted the dame.  
A fair budding branch from the gardens above.  
Where millions with millions agree,  
She brought in her hand as a pledge of her love.  
And the plant she named Liberty Tree.

The celestial exotic stuck deep in the ground,  
Like a native it flourished and bore;  
The fame of its fruit drew the nations around,  
To seek out this peaceable shore.  
Unmindful of names or distinctions they came,  
For freemen like brothers agree;  
With one spirit endued, they one friendship pursued,  
And their temple was Liberty Tree.

Beneath this fair tree, like the patriarchs of old.  
Their bread in contentment they ate,  
Unvexed with the troubles of silver or gold,  
The cares of the grand and the great.  
With timber and tar they Old England supplied,  
And supported her power on the sea:  
Her battles they fought, without getting a groat,  
For the honour of Liberty Tree.

But hear, O ye swains, ('tis a tale most profane,)  
How all the tyrannical powers,  
Kings, Commons, and Lords, are uniting amain  
To cut down this guardian of ours.

From the east to the west blow the trumpet to arms,  
Thro' the land let the sound of it flee:  
Let the far and the near all unite with a cheer,  
In defence of our Liberty Tree.

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AN ADDRESS TO LORD HOWE.

The rain pours down, the city looks forlorn,
And gloomy subjects suit the howling morn;
Close by my fire, with door and window fast,
And safely shelter'd from the driving blast,
To gayer thoughts I bid a day's adieu,

³ This and the following songs and poems can be found in *The Writings of Thomas Paine* (1896), vol. IV, collected and edited by Moncure Daniel Conway, pp. 484-494

To spend a scene of solitude with you.

So oft has black revenge engross'd the care
Of all the leisure hours man finds to spare;
So oft has guilt, in all her thousand dens,
Call'd for the vengeance of chastising pens;
That while I fain would ease my heart on you,
No thought is left untold, no passion new.

From flight to flight the mental path appears,
Worn with the steps of near six thousand years,
And fill'd throughout with every scene of pain,
From George the murderer down to murderous Cain
Alike in cruelty, alike in hate,
In guilt alike, but more alike in fate,
Cursed supremely for the blood they drew,
Each from the rising world, while each was new.

Go, man of blood! true likeness of the first,
And strew your blasted head with homely dust:
In ashes sit -- in wretched sackcloth weep,
And with unpitied sorrows cease to sleep.
Go haunt the tombs, and single out the place
Where earth itself shall suffer a disgrace.
Go spell the letters on some mouldering urn,
And ask if he who sleeps there can return.
Go count the numbers that in silence lie,
And learn by study what it is to die;
For sure your heart, if any heart you own,
Conceits that man expires without a groan;
That he who lives receives from you a grace,
Or death is nothing but a change of place:
That peace is dull, that joy from sorrow springs
And war the most desirable of things.
Else why these scenes that wound the feeling mind.
This sport of death -- this cockpit of mankind!
Why sobs the widow in perpetual pain?
Why cries the orphan, "Oh! my father's slain!"
Why hangs the sire his paralytic head,
And nods with manly grief -- "My son is dead!"
Why drops the tear from off the sister's cheek,
And sweetly tells the misery she would speak?
Or why, in sorrow sunk, does pensive John
To all the neighbors tell, "Poor master's gone!"

Oh! could I paint the passion that I feel,
Or point a horror that would wound like steel,
To thy unfeeling, unrelenting mind,
I'd send destruction and relieve mankind.
You that are husbands, fathers, brothers, all
The tender names which kindred learn to call;
Yet like an image carved in massy stone,
You bear the shape, but sentiment have none;
Allied by dust and figure, not with mind.
You only herd, but live not with mankind,

Since then no hopes to civilize remain,
And mild Philosophy has preached in vain,
One prayer is left, which dreads no proud reply,
That he who made you breathe will make you die.

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### **THE BOSTON PATRIOTIC SONG.**

*Tune -- Anacreon in Heaven.*

Ye sons of Columbia who bravely have fought,  
For those rights which unstain'd from your sires have descended.  
May you long taste the blessings your valor has bought,  
And your sons reap the soil which their fathers defended;  
    'Mid the reign of mild peace,  
    May your nation increase,  
With the glory of Rome, and the wisdom of Greece;  
    And ne'er may the sons of Columbia be slaves,  
    While the earth bears a plant or the sea rolls its waves.

In a clime whose rich vales feed the marts of the world,  
Whose shores are unshaken by Europe's commotion.  
The trident of commerce should never be hurl'd.  
    To increase the legitimate power of the ocean;  
    But should pirates invade,  
    Though in thunder array'd,  
Let your cannon declare the free charter of trade.  
    For ne'er shall the sons, etc.

The fame of our arms, of our laws the mild sway,  
Had justly ennobled our nation in story,  
Till the dark clouds of faction obscured our bright day,  
And envelop'd the sun of American glory;  
    But let traitors be told,  
    Who their country have sold.  
And barter'd their God for his image in gold,  
    That ne'er shall the sons, etc.

While France her huge limbs bathes recumbent in blood,  
And society's base threats with wide dissolution.  
May Peace, like the dove who return'd from the flood,  
Find an Ark of abode in our mild Constitution;  
    But tho' peace is our aim.  
    Yet the boon we disclaim.  
If bought by our Sovereignty, Justice, or Fame.  
    For ne'er shall the sons, etc.

'T is the fire of the flint each American warms,  
Let Rome's haughty victors beware of collision!  
Let them bring all the vassals of Europe in arms,  
We're a World by ourselves, and disdain a division;  
    While with patriot pride.  
    To our laws we're allied,  
No foe can subdue us, no faction divide;  
    For ne'er shall the sons, etc.

Our mountains are crown'd with imperial oak,  
Whose roots like our Liberty ages have nourished,  
But long e'er the nation submits to the yoke,  
Not a tree shall be left on the soil where it flourished.  
Should invasion impend,  
Every grove would descend,  
From the hill tops they shaded, our shores to defend.  
For ne'er shall the sons, etc.

Let our patriots destroy vile anarchy's worm,  
Lest our Liberty's growth should be check'd by corrosion,  
Then let clouds thicken round us, we heed not the storm,  
Our earth fears no shock but the earth's own explosion;  
Foes assail us in vain,  
Tho' their fleets bridge the main,  
For our altars, and claims, with our lives we'll maintain.  
For ne'er shall the sons, etc.

Should the tempest of war overshadow our land,  
Its bolts can ne'er rend Freedom's temple asunder;  
For unmoved at its portals would Washington stand  
And repulse with his breast the assaults of the thunder.  
His sword from its sleep,  
In its scabbard would leap,  
And conduct with its point every flash to the deep.  
For ne'er shall the sons, etc.

Let Fame to the world sound America's voice,  
No intrigue her sons from their government can sever;  
Its wise regulations and laws are their choice,  
And shall flourish till Liberty slumber forever.  
Then unite heart and hand,  
Like Leonidas' band;  
And swear by the God of the ocean and land,  
That ne'er shall the sons of Columbia be slaves,  
While the earth bears a plant, or the sea rolls its waves.

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### **HAIL GREAT REPUBLIC.**

*Tune -- Rule Britannia.*

HAIL great Republic of the world,  
Which rear'd her empire in the west,  
Where fam'd Columbus' flag unfurl'd.  
Gave tortured Europe scenes of rest;  
Be thou forever great and free,  
The land of Love, and Liberty!

Beneath thy spreading, mantling vine.  
Beside each flowery grove and spring.  
And where thy lofty mountains shine.  
May all thy sons and fair ones sing.  
Be thou forever, &c

From thee may hellish Discord prowl,  
With all her dark and hateful train;  
And whilst thy mighty waters roll,  
May heaven-descended Concord reign.  
Be thou forever, &c.

Where'er the Atlantic surges lave.  
Or sea the human eye delights,  
There may thy starry standard wave,  
The Constellation of thy Rights!  
Be thou forever, &c

May ages as they rise proclaim  
The glories of thy natal day;  
And States from thy exalted name  
Learn how to rule, and to obey.  
Be thou forever, &c

Let Laureats make their birthdays known.  
Or how war's thunderbolts are hurl'd;  
Tis ours the charter, ours alone,  
To sing the birthday of a world!  
Be thou forever great and free,  
The land of Love and Liberty!

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COLUMBIA.

Tune -- Anacreon in Heaven.

To Columbia who, gladly reclined at her ease
On Atlantic's broad bosom, lay smiling in peace,
Minerva flew hastily sent from above,
And address her this message from thundering Jove:
"Rouse, quickly awake!
Your Freedom's at stake,
Storms arise, your renown'd Independence to shake;
Then lose not a moment, my aid I will lend,
If your sons will assemble your Rights to defend.

Roused Columbia rose up, and indignant declared,
That no nation she'd wrong'd and no nation she fear'd,
That she wished not for war, but if war were her fate,
She would rally up souls independent and great:
Then tell mighty Jove,
That we quickly will prove,
We deserve the protection he 'll send from above;
For ne'er shall the sons of America bend,
But united their Rights and their Freedom defend.

Minerva smiled cheerfully as she withdrew,
Enraptured to find her Americans true,
"For," said she, "our sly Mercury oft times reports,
That your sons are divided" -- Columbia retorts,

“Tell that vile god of thieves,
His report but deceives,
And we care not what madman such nonsense believes,
For ne’er shall the sons of America bend.
But united their Rights and their Freedom defend.”

Jove rejoiced in Columbia such union to see,
And swore by old Styx she deserved to be free;
Then assembled the Gods, who all gave consent,
Their assistance if needful her ill to prevent;
Mars arose, shook his armour.
And swore his old Farmer [i.e., Washington]
Should ne’er in his country see aught that could harm her,
For ne’er should the sons of America bend,
But united their Rights and their Freedom defend.

Minerva resolved that her AEGis she’d lend,
And Apollo declared he their cause would defend,
Old Vulcan an armour would forge for their aid,
More firm than the one for Achilles he made.
Jove vow’d he ‘d prepare,
A compound most rare,
Of courage and union, a bountiful share;
And swore ne’er shall the sons of America bend,
But their Rights and their Freedom most firmly defend.

Ye sons of Columbia, then join hand in hand,
Divided we fall, but united we stand;
'T is ours to determine, 't is ours to decree,
That in peace we will live Independent and Free;
And should from afar
Break the horrors of war.
We’ll always be ready at once to declare,
That ne’er will the sons of America bend,
But united their Rights and their Freedom defend.

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**FROM THE CASTLE IN THE AIR,  
TO THE LITTLE CORNER OF THE WORLD.<sup>4</sup>**

In the region of clouds, where the whirlwinds arise.  
My Castle of Fancy was built;  
The turrets reflected the blue from the skies,  
And the windows with sunbeams were gilt.

The rainbow sometimes, in its beautiful state,  
Enamell’d the mansion around;  
And the figures that fancy in clouds can create,  
Supplied me with gardens and ground.

I had grottoes, and fountains, and orange tree groves,

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<sup>4</sup> Moncure Daniel Conway: “Addressed to Lady Smyth (see vol. iii.. chap. 27). While in prison in Paris, Paine received sympathetic letters from ‘The Little Corner of the World.’ He responded from ‘The Castle in the Air,’ and afterwards found her to be Lady Smyth. -- Editor.”



I had all that enchantment has told;  
I had sweet shady walks, for the Gods and their Loves,  
I had mountains of coral and gold.

But a storm that I felt not, had risen and roll'd,  
While wrapp'd in a slumber I lay;  
And when I looked out in the morning, behold  
My Castle was carried away.

It pass'd over rivers, and vallies, and groves,  
The world it was all in my view;  
I thought of my friends, of their fates, of their loves,  
And often, full often of You.

At length it came over a beautiful scene,  
That nature in silence had made;  
The place was but small, but't was sweetly serene,  
And chequer'd with sunshine and shade.

I gazed and I envied with painful goodwill,  
And grew tired of my seat in the air;  
When all of a sudden my Castle stood still,  
As if some attraction was there.

Like a lark from the sky it came fluttering down.  
And placed me exactly in view.  
When whom should I meet in this charming retreat,  
This corner of calmness, but You.

Delighted to find you in honour and ease,  
I felt no more sorrow, nor pain;  
But the wind coming fair, I ascended the breeze,  
And went back with my Castle again.

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A FEDERALIST FEAST.

From Mr. Paine to Mr. Jefferson, on the occasion of a toast being given at a federal dinner at Washington, of, "May they never know pleasure who love Paine."

I Send you, Sir, a tale about some 'Feds,'
Who, in their wisdom, got to loggerheads.
The case was this, they felt so flat and sunk.
They took a glass together and got drunk.
Such things, you know, are neither new nor rare,
For some will harry themselves when in despair.
It was the natal day of Washington,
And that they thought a famous day for fun;
For with the learned world it is agreed,
The better day the better deed.
They talked away, and as the glass went round
They grew, in point of wisdom, more profound;
For at the bottom of the bottle lies
That kind of sense we overlook when wise.
'Come, here's a toast,' cried one, with roar immense,

May none know pleasure who love (Common Sense).
'Bravo!' cried some, -- no, no! some others cried,
But left it to the waiter to decide.
'I think, said he, the case would be more plain,
To leave out (Common Sense), and put in Paine.'
On this a mighty noise arose among
This drunken, bawling, senseless throng:
Some said that common sense was all a curse,
That making people wiser made them worse --
It learned them to be careful of their purse,
And not be laid about like babes at nurse,
Nor yet believe in stories upon trust.
Which all mankind, to be well governed, must;
And that the toast was better at the first,
And he that didn't think so might be cursed.
So on they went, till such a fray arose
As all who know what Feds are may suppose.

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### **LINES EXTEMPORE.**

*July, 1803.*

QUICK as the lightning's vivid flash  
The poet's eye o'er Europe rolls;  
Sees battles rage, hears tempests crash,  
And dims at horror's threatening scowls --

Marks ambition's ruthless king,  
With crimson'd banners scathe the globe.  
While trailing after conquest's wing,  
Man's festering wounds his demons probe.

Palled with streams of reeking gore  
That stain the proud imperial day;  
He turns to view the western shore,  
Where freedom holds her boundless sway.

'T is here her sage [i.e., Pres. Jefferson] triumphant sways  
An empire in the people's love,  
'T is here the sovereign will obeys  
No King but Him who rules above.

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THE CAUSE OF THE YELLOW FEVER, AND THE MEANS OF PREVENTING IT IN PLACES NOT YET INFECTED WITH IT.⁵

Addressed to the Board of Health in America.

⁵ *Ibid.* p. 470-474.

A Great deal has been written respecting the Yellow Fever. First, with respect to its causes, whether domestic or imported. Secondly, on the mode of treating it.

What I am going to suggest in this essay is, to ascertain some point to begin at, in order to arrive at the cause, and for this purpose some preliminary observations are necessary.

The Yellow Fever always begins in the lowest part of a populous mercantile town near the water, and continues there, without affecting the higher parts. The sphere or circuit it acts in is small, and it rages most where large quantities of new ground have been made by banking out the river, for the purpose of making wharfs. The appearance and prevalence of the Yellow Fever in these places, being those where vessels arrive from the West Indies, has caused the belief that the Yellow Fever was imported from thence: but here are two 'cases acting in the same place: the one, the condition of the ground at the wharves, which being new made on the muddy and filthy bottom of the river, is different from the natural condition of the ground in the higher parts of the city, and consequently subject to produce a different kind of effluvia or vapour; the other case is the arrival of vessels from the West Indies.

In the State of Jersey neither of these cases has taken place; no shipping arrive there, and consequently there have been no embankments for the purpose of wharfs; and the Yellow Fever has never broke out in Jersey. This, however, does not decide the point, as to the immediate cause of the fever, but it shows that this species of fever is not common to the country in its natural state; and, I believe the same was the case in the West Indies before embankments began for the purpose of making wharfs, which always alter the natural condition of the ground. No old history, that I know of, mentions such a disorder as the Yellow Fever.

A person seized with the Yellow Fever in an affected part of the town, and brought into the healthy part, or into the country, and among healthy persons, does not communicate it to the neighbourhood, or to those immediately around him; why then are we to suppose it can be brought from the West Indies, a distance of more than a thousand miles, since we see it cannot be carried from one town to another, nor from one part of a town to another, at home? Is it in the air? This question on the case requires a minute examination. In the first place, the difference between air and wind is the same as between a stream of water and a standing [i.e., motionless body of] water. A stream of water is water in motion, and wind is air in motion. In a gentle breeze the whole body of air, as far as the breeze extends, moves at the rate of seven or eight miles an hour; in a high wind, at the rate of seventy, eighty, or an hundred miles an hour: when we see the shadow of a cloud gliding on the surface of the ground, we see the rate at which the air moves, and it must be a good trotting horse that can keep pace with the shadow, even in a gentle breeze; consequently, a body of air that is in and over any place of the same extent as the affected part of a city may be, will, in the space of an hour, even at the moderate rate I speak of, be moved seven or eight miles to leeward; and its place, in and over the city, will be supplied by a new body of air coming from a healthy part, seven or eight miles distant the contrary way; and then on in continual succession. The disorder, therefore, is not in the air, considered in its natural state, and never stationary. This leads to another consideration of the case.

An impure effluvia, arising from some cause in the ground, in the manner that fermenting liquors produce near their surface an effluvia that is fatal to life, will become mixed with the air contiguous to it, and as fast as that body of air moves off it will impregnate every succeeding body of air, however pure it may be when it arrives at the place.

The result from this state of the case is, that the impure air, or vapour, that generates the Yellow Fever, issues from the earth, that is, from the new made earth, or ground raised on the muddy and filthy bottom of the river; and which impregnates every fresh body of air that comes over the place, in like manner as air becomes heated when it approaches or passes over fire, or becomes offensive in smell when it approaches or passes over a body of corrupt vegetable or animal matter in a state of putrefaction.

The muddy bottom of rivers contains great quantities of impure and often inflammable air, (carburetted hydrogen gas,) injurious to life ; and which remains entangled in the mud till let loose from thence by some accident. This air is produced by the dissolution and decomposition of any combustible

matter falling into the water and sinking into the mud, of which the following circumstance will serve to give some explanation.

In the fall of the year that New York was evacuated (1783,) General Washington had his headquarters at Mrs. Berrian's, at Rocky Hill, in Jersey, and I was there: the Congress then sat at Prince Town [Princeton]. We had several times been told that the river or creek, that runs near the bottom of Rocky Hill, and over which there is a mill, might be set on fire, for that was the term the country people used; and as General Washington had a mind to try the experiment, General Lincoln, who was also there, undertook to make preparation for it against the next evening, November 5th. This was to be done, as we were told, by disturbing the mud at the bottom of the river, and holding something in a blaze, as paper or straw, a little above the surface of the water.

Colonels [David] Humphreys and [David] Cobb were at that time Aid[e]s-de-Camp of General Washington, and those two gentlemen and myself got into an argument respecting the cause. Their opinion was that, on disturbing the bottom of the river, some bituminous matter arose to the surface, which took fire when the light was put to it; I, on the contrary, supposed that a quantity of inflammable air was let loose, which ascended through the water, and took fire above the surface. Each party held to his opinion, and the next evening the experiment was to be made.

A scow had been stationed in the mill dam, and General Washington, General Lincoln, and myself, and I believe Colonel Cobb, (for Humphreys was sick,) and three or four soldiers with poles, were put on board the scow. General Washington placed himself at one end of the scow, and I at the other; each of us had a roll of cartridge paper, which we lighted and held over the water, about two or three inches from the surface, when the soldiers began disturbing the bottom of the river with the poles.

As General Washington sit at one end of the scow, and I at the other, I could see better any thing that might happen from his light, than I could from my own, over which I was nearly perpendicular. When the mud at the bottom was disturbed by the poles, the air bubbles rose fast, and I saw the fire take from General Washington's light and descend from thence to the surface of the water, in a similar manner as when a lighted candle is held so as to touch the smoke of a candle just blown out, the smoke will take fire, and the fire will descend and light up the candle. This was demonstrative evidence that what was called setting the river on fire was setting on fire the inflammable air that arose out of the mud.

I mentioned this experiment to Mr. [David] Rittenhouse⁶ of Philadelphia the next time I went to that city, and our opinion on the case was, that the air or vapour that issued from any combustible matter, (vegetable or otherwise,) that underwent a dissolution and decomposition of its parts, either by fire or water in a confined place, so as not to blaze, would be inflammable, and would become flame whenever it came in contact with flame.

In order to determine if this was the case, we filled up the breech of a gun barrel about five or six inches with saw dust, and the upper part with dry sand to the top, and after spiking up the touch hole, put the breech into a smith's furnace, and kept it red hot, so as to consume the saw dust; the sand of consequence would prevent any blaze. We applied a lighted candle to the mouth of the barrel; as the first vapour that flew on would be humid, it extinguished the candle; but after applying the candle three or four times, the vapour that issued out began to flash; we then tied a bladder over the mouth of the barrel, which the vapour soon filled, and then tying it string round the neck of the bladder, above the muzzle, took the bladder off.

As we could not conveniently make experiments upon the vapour while it was in the bladder, the next operation was to get it into a phial. For this purpose, we took a phial of about three or four ounces, filled it with water, put a cork slightly into it, and introducing it into the neck of the bladder, worked the cork out, by getting hold of it through the bladder, into which the water then emptied itself, and the air in

⁶ David Rittenhouse (1733-1796), scientist, mathematician, astronomer, inventor, and successor of Franklin as President of the American Philosophical Society; of which Paine was a member.

the bladder ascended into the phial: we then put the cork into the phial, and took it from the bladder. It was now in a convenient condition for experiment.

We put a lighted match into the phial, and the air or vapour in it blazed up in the manner of a chimney on fire; we extinguished it two or three times, by stopping the mouth of the phial; and putting the lighted match to it again it repeatedly took fire, till the vapour was spent, and the phial became filled with atmospheric air.

These two experiments, that in which some combustible substance (branches and leaves of trees) had been decomposed by water, in the mud; and this, where the decomposition had been produced by fire, without blazing, shews that a species of air injurious to life, when taken into the lungs, may be generated from substances which, in themselves, are harmless.

It is by means similar to these that charcoal, which is made by fire without blazing, emits a vapour destructive to life. I now come to apply these cases, and the reasoning deduced therefrom, to account for the cause of the Yellow Fever.*⁷

First: -- The Yellow Fever is not a disorder produced by the climate naturally, or it would always have been here in the hot months. The climate is the same now as it was fifty or a hundred years ago; there was no Yellow Fever then, and it is only within the last twelve years, that such a disorder has been known in America.

Secondly: -- The low grounds on the shores of the rivers, at the cities, where the Yellow Fever is annually generated, and continues about three months without spreading, were not subject to that disorder in their natural state, or the Indians would have forsaken them; whereas, they were the parts most frequented by the Indians in all seasons of the year, on account of fishing. The result from these cases is, that the Yellow Fever is produced by some new circumstance not common to the country in its natural state, and the question is, what is that new circumstance?

It may be said, that everything done by the white people, since their settlement in the country, such as building towns, clearing lands, levelling hills, and filling valleys, is a new circumstance; but the Yellow Fever does not accompany any of these new circumstances. No alteration made on the dry land produces the Yellow Fever; we must therefore look to some other new circumstances, and we now come to those that have taken place between wet and dry, between land and water.

The shores of the rivers at New York, and also at Philadelphia, have on account of the vast increase of commerce, and for the sake of making wharfs, undergone great and rapid alterations from their natural state within a few years; and it is only in such parts of the shores where those alterations have taken place that the Yellow Fever has been produced. The parts where little or no alteration has been made, either on the East or North River, and which continue in their natural state, or nearly so, do not produce the Yellow Fever. The fact therefore points to the cause.

Besides several new streets gained from the river by embankment, there are upwards of eighty new wharfs made since the war, and the much greater part within the last ten or twelve years; the consequence of which has been that great quantities of filth or combustible matter deposited in the muddy bottom of the river contiguous to the shore, and which produced no ill effect while exposed to the air, and washed twice every twenty-four hours by the tide water, have been covered over several feet deep with new earth, and pent up, and the tide excluded. It is in these places, and in these only, that the Yellow Fever is produced.

⁷ [*Footnote in original*] * The author does not mean to infer that the inflammable air or carburetted hydrogen gas, is the cause of the Yellow Fever; but that perhaps it enters into some combination with miasm generated in low grounds, which produces the disease.- Author.

Having thus shewn, from the circumstances of the case, that the cause of the Yellow Fever is in the place where it makes its appearance, or rather, in the pernicious vapour issuing therefrom, I go to shew a method of constructing wharfs, where wharfs are yet to be constructed (as on the shore on the East River at Corlder's Hook, and also on the North River) that will not occasion the Yellow Fever, and which may also point out a method of removing it from places already infected with it. Instead, then, of embanking out the river and raising solid wharves of earth on the mud bottom of the shore, the better method would be to construct wharfs on arches, built of stone; the tide will then flow in under the arch, by which means the shore, and the muddy bottom, will be washed and kept clean, as if they were in their natural state, without wharves.

When wharfs are constructed on the shore lengthways, that is without cutting the shore up into slips, arches can easily be turned, because arches joining each other lengthways serve as buttments to each other; but when the shore is cut up into slips there can be no buttments; in this case wharfs can be formed on stone pillars, or wooden piles planked over on the top. In either of these cases, the space underneath will be commodious shelter or harbour for small boats, which can come in and go out always, except at low water, and be secure from storms and injuries. This method besides preventing the cause of the Yellow Fever, which I think it will, will render the wharfs more productive than the present method, because of the space preserved within the wharf.

I offer no calculation of the expence of constructing wharfs on arches or piles; but on a general view, I believe they will not be so expensive as the present method. A very great part of the expence of making solid wharfs of earth is occasioned by the carriage of materials, which will be greatly reduced by the methods here proposed, and still more so were the arches to be constructed of cast iron blocks. I suppose that one ton of cast iron blocks would go as far in the construction of an arch as twenty tons of stone.

If, by constructing wharfs in such a manner that the tidewater can wash the shore and bottom of the river contiguous to the shore, as they are washed in their natural condition, the Yellow Fever can be prevented from generating in places where wharfs are yet to be constructed, it may point out a method of removing it, at least by degrees, from places already infected with it; which will be by opening the wharfs in two or three places in each, and letting the tide water pass through; the parts opened can be planked over, so as not to prevent the use of the wharf.

In taking up and treating this subject, I have considered it as belonging to natural philosophy, rather than medicinal art; and therefore I say nothing about the treatment of the disease, after it takes place; I leave that part to those whose profession it is to study it.

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