



*Sed in ecclesia volo quinque verba
sensu meo loqui, ut et alios instruam:
quam decem millia verborum in lingua.*

Thomas Browne's Commonplace Book

or

A NETWORK OF TEXTS

or

The Garden of Cyrus

algorithmically recultivated

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For more information, see

<http://robineggsky.com/posts/browne.html>.

TO MY WORTHY AND HONORED FRIEND
DOCTOR ANUPAM BASU
ON THE OCCASION OF HIS APPOINTMENT
TO THE FACULTY OF WASHINGTON UNIVERSITY

Lately I have been mulling over Sir Thomas Browne's preface to *Pseudodoxia Epidemica*, which begins,

Would Truth dispense, we could be content, with Plato, that knowledge were but remembrance; that intellectual acquisition were but reminiscential evocation, and new Impressions but the colouring of old stamps which stood pale in the soul before.

Browne ends with an image of innocence, the outline of the Logos impressed on us like the reverse of a woodcut, ready for hand-coloring; we are like children, coloring the book of ourselves. He takes particular care to ornament the two clauses in the middle of the sentence, leaving what we can learn and how we learn it poised on the two pivotal, but subjunctive, "were but". The idea appeals to him so profoundly that he can't help but step on the lede ("would Truth dispense," instead of, "if it were true"). This Lycidas of an idea is dead, but he will observe the forms of reverence, and sound a note of elegy.

But only a brief note. Browne wants the corpse below ground before it ripens:

For what is worse, knowledge is made by oblivion, and to purchase a clear and warrantable body of Truth, we must forget and part with much we know. Our tender Enquiries taking up Learning at large, and together with true and assured notions, receiving many, wherein our reviewing judgments do find no satisfaction. And therefore in this Encyclopaedie and round of Knowledge, like the great and exemplary Wheels of Heaven, we must observe two Circles: that while we are daily carried about, and whirled on by the swing and rapt of the one, we may maintain a natural and proper course, in the slow and sober wheel of the other.

This is a different sort of machine. Platonic recollection was as predictable as a printing press and as simple as a lever and fulcrum. Here, his mention of the "Wheels of Heaven" invites us to see this machine as a series of gears, jeweled like the workings of a watch, but I think he has something much more haphazard in mind, something like the preindustrial grist mill, a contraption cobbled together out of wooden pulleys and leather belts, the building as likely to catch fire as to make flour. The miller must attend to every hand-carved cog and rawhide-spliced strap, lest the kludge fly apart and maim him. Every sack of grain requires close inspection, lest he attempt to grind meal from straw and stones. It's no wonder vulgar errors are epidemic. How could they be otherwise?

Browne is caught between two ideas. We learn either by remembering or by forgetting, either through regular and simple processes or through cobbled-together contraptions. If Browne, who is not given to hysteria, found himself at such a pass during the combustible 1640's, when revolutions came piled one atop another, then what excuse do we have for not pausing over the same questions, when change comes to us faster and deeper than it did to him?

Take, if you will, an open-ended Department of Defense research program. Add ten thousand capable engineers, and introduce them to a highly developed and very liquid capital market. Release the results into a culture that for generations has run on information and technology, and that never has stopped looking for its next frontier. Before you can say "reminiscential evocation," every bit of knowledge, or enough to approximate every bit of it, whether true or false, important or trivial, is just a few clicks away, the things we should always and forever remember chock-a-block with things rightly and immediately forgotten.

Our machine, our globe-spanning Cloud, confuses the actions of remembering and forgetting. By saving everything, we make it possible to forget everything, simply because it is saved. But we cannot really forget, because everything is available for recall from The Cloud. Knowledge is "always already," as we used to say when I was a young man, discovered, remembered, forgotten, and overlooked.

The Cloud, Browne's two machines for learning made one and made real, has more parts than I care to list. But at its center is The Algorithm, both in the abstract and in the particular forms which mediate our access to our uploaded memory. You and I spend a great deal of our time (you, to better effect than I do) studying individual algorithms and bending them to our needs. But we have never stepped back and thought about The Algorithm as an abstract class, with properties which occur in all particular instances. One property concerns us here: an algorithm is an instantiation of the intentions of its creator; an algorithm, we might say, is a purpose reified, the voice of the will speaking aloud.

But whose will? Whose voice? There's The Cloud, which may or may not be to the good, but which, regardless, we can access only through a narrow set of algorithms which were crafted to serve commercial intentions which are often at cross-purposes with our needs. Most of our search runs through Google, and yet Google appears to be concerned less with facilitating search and more with using search to match audiences with advertising. If The Cloud is the large spinning wheel of everything that Browne imagines, then The Algorithm is the smaller, slower turning wheel of our discernment. But it is not only our discernment at work. It is Google's and it is ours, but it is not clear which part is theirs, and which ours.

The Garden of Cyrus suggests a different approach to the regulation of the rhythms of memory. In his prefatory letter, Browne speaks of a "considerable garden." Browne does not mean a garden that is expansive and elaborate; instead, he means, "a garden worthy of close examination and study." He has in mind the kind of garden he would have seen at more than one medical school, where gardens were filled with plants useful to physicians. There, a logic of selection and arrangement was embedded in larger networks of educational and medical practices. A "considerable garden" is an ordered container of knowledge and processes which serves other, larger intentions through an understood set of interactions. It is The Cloud and The Algorithm in one object, with well-understood interfaces tailored to the needs of specific groups of users.

As long as the intentions of its patrons remain constant, there is no need for any essential change in the container, its contents, or its methods of use; planting a new garden is act of imitation:

The Field of knowledge hath been so traced, it is hard to spring any thing new. Of old things we write something new, If truth may receive addition, or envy will have any thing new; since the Ancients knew the late Anatomical discoveries, and Hippocrates the Circulation.

The overarching aims of medicine and medical education constrain remembering and forgetting within the garden. Matters correctly disregarded are cast out beyond its walls, while within are preserved ideas which which serve the medical profession, and against which new ideas are evaluated. The garden is not just a field, literally, of data and algorithms; it also is itself a kind of meta-garden, regulating its own contents and methods.

But for all of that, gardens and memory are organic processes, subject to time and chance. Both require the "soft and flexible sense" for which Browne is so justly famous, a habit of mind formed, I suppose, by the uncertain work of early modern science:

Your discerning judgement so well acquainted with that study, will expect herein no mathematicall truths, as well understanding how few generalities and V finita's there are in nature. How Scaliger hath found exceptions in most Universals of Aristotle and Theophrastus. How Botanicall Maximes must have fair allowance, and are tolerably currant, if not intolerably over-balanced by exceptions.

My practice in this work has been to follow Browne's approach to the related problems of remembering and forgetting, and of selecting and arranging. From the white noise of The Cloud, I curated a kind of digital library, which included books which Browne might have read, or might have informed the books he read, or perhaps he would have read had he been alive

when they were written, altogether numbering about 275. No great sophistication informed the selection; I had to do the job twice. Once done, I indexed my library sentence-by-sentence in three or four different ways; since it was easy for me to do so once, I simply did so again when it suited me. I composed new interfaces and repurposed existing ones to make it easy for me to search my library, and to collect, cull, curate, and arrange the results into the openings which follow these remarks. Some of the processes were, I suppose, fairly complex, the fruit of such knowledge as I have accumulated working with you on your research. Others were quite simple, in one case consisting solely of a willingness to sit on the floor and weave patterns from slips of paper. The point, however, was not complexity and simplicity for their own sake; instead, it was to instantiate, in a series of algorithms and procedures, my changing intentions and purposes in composing these openings. In effect, I wanted for myself a custom-made series of algorithms to manage the twinned problems of remembering and forgetting, so as to embank the flood of information from The Cloud with the bounds of such meager care and patience as I could muster. I had hoped to recover at least a semblance of the “reminiscential evocation” which Browne speaks of in his preface to *Pseudodoxia Epidemica*. Whether I have succeeded, or whether I should, as Browne says, “crave exceeding pardon in the audacity of the Attempt,” I leave to your maturer judgement.

I once heard an old and wise Calvinist picture the work of a gardener thinning his seedlings: “This one lives,” the gardener says, “these three, no,” pinching them with his thumb, “and this, the fifth, it lives.” A green thumb is not a badge of office, like a scepter and an orb; instead, it is the evidence of experience and effort, formed by pinching and pulling, like the calluses on the fingers of a violinist’s left hand. The algorithms I used would surely be of more interest to you than this; however, their animating intentions have been fulfilled, and the will they voiced has grown hoarse from so much speech. All that remains is this, the evidence of the friction between data and algorithm, between remembering and forgetting; I have not washed my hands.

I had hoped to conclude these remarks with such praise as is appropriate both to the form of the dedicatory epistle and to your considerable talents, the decorum of first motive being as compelling as the justice of the second, but we have, I fear, quite forgotten how to bestow such praise. The best I can do is to conclude as Browne concludes his preface to *The Garden of Cyrus*, since his words were the best my searches recalled:

To wish all Readers of your abilities, were unreasonably to multiply the number of Scholars beyond the temper of these times. But unto this ill-judging age, I charitably desire a portion of your equity, judgement, candour, and ingenuity, and so with much excuse I bring these low delights, and poor maniples to your Treasure.

Concord Township
April, 2016

Your affectionate Friend
and Servant,
STEPHEN M. PENTECOST

COMPOSITION

COMPOSITION 1

Of old things we write something new, If truth may receive addition, or envy will have any thing new; since the Ancients knew the late Anatomically discoveries, and Hippocrates the Circulation.¹

Certainly there are yet many things left to discovery, and it cannot be any inconvenience for us, to maintain a new truth, or rectify an ancient error.²

What is this but a new learning; a new canker to rust and corrupt the old truth?³

Since here strange truth is putting forth its might
To hit thee in thine ears, a new aspect
Of things to show its front.⁴

Circulation comes to be carried on by a new wheel, which it costs less both to erect and to maintain than the old one.⁵

¹Browne, Thomas, Sir; *The garden of Cyrus, or the quincunciall, lozenge, or net-work plantations of the ancients, artificially, naturally, mystically considered.*

²Wilkins, John; *The Discovery of a World in the Moone.*

³Latimer, Hugh; Morley, Henry; *Sermons on the Card.*

⁴Lucretius Carus, Titus; Leonard, William Ellery; *On the Nature of Things.*

⁵Smith, Adam; *An Inquiry into the Nature and Causes of the Wealth of Nations.*

Cottonwood trees in the river bottom,
Abused by lightning and tempest,
Wither with the drought, and on their dead limbs,
A dozen crows hoarsely caw.
Beneath the trees, branches old and fallen
Tangle, branches lie in drifts around
Bare trunks, trunks like whole orders, families,
And genera, each stripped to its
One idea, the one hoarse call of crows. ⁶

Trees lie as they fall, but the last windstorm
Did not fell them, nor the last stroke,
Nor the last word. But where once grew many
Trees, we expect to find saplings:
The fall of old forms is the companion
To the sprouting of new orders.
Among and beneath the wrack of fallen
Systems a new seed is sprouting,
The new in art formed always from the old. ⁷

And I became weary of poets old
And new, so I sought the orchard,
Driven there by the constant, shifting wind.
Every tree was blossoming,
Each tree grafted in its proper season,
Figs in summer, cherries in winter,
For ungrafted they cannot bear the fruit
Proper to their care, nor can I
Recall their voices in an orchard song. ⁸

⁶Parkman, Francis; *The Oregon Trail.* Darwin, Charles; *The Origin of Species.*

⁷Donne, John; *Devotions Upon Emergent Occasions Together with Death's Duel.* Darwin, Charles; *Origin of Species.* Churchill, Winston; *The River War: An Account of the Reconquest of the Sudan.* Emerson, Ralph Waldo; *Essays First Series.*

⁸Nietzsche, Friedrich Wilhelm; *Thus Spake Zarathustra.* Bronte, Charlotte; *Jane Eyre.* Parkman; *Oregon Trail.* Cato; Varro; *Roman Farm Management.* Butler, Samuel; *Evolution, Old & New.* Jefferies, Richard; *Field and Hedgerow.*

COMPOSITION 2

**For though discursive enquiry and rationall conjecture,
may leave handsome gashes and flesh-wounds; yet without
conjunction of this expect no mortal or dispatching blows
unto error.**⁹

Certainly there are yet many things left to discovery, and it cannot be any inconvenience for us, to maintaine a new truth, or rectifie an ancient error.¹⁰

Error there may be, as when wee expect that which shall not be; or suspect what has not been: but in neither case can a man be charged with Untruth.¹¹

God is a conjecture: but who could drink all the bitterness of this conjecture without dying?¹²

But though without dissent this point be fixed, how is mortal man to account for it?¹³

⁹Browne; *Garden*.

¹⁰Wilkins.

¹¹Hobbes, Thomas; *Leviathan*.

¹²Nietzsche; *Zarathustra*.

¹³Melville, Herman; *Moby Dick, or, the whale*.

The poet of medieval India
Inquired of his inspiration:
“Where are your songs, my bird, in the long night?
Just now the blackbird and thrassel
Sing a royal march for the coming spring,
And the nightingales lament,
‘O, Bion the herdsman is dead, and Bion’s song
Too has died, and his minstrelsy;’
Why, O, why, is your song cut off from me?”¹⁴

I had hoped here to produce from nothing
Something that might really deserve
To be called poetry, true, strong, natural,
And sweet, with the life of wild birds
Twittering through it, or like an anthem
Of the wind in the close-ranked pines,
To sing like the fabled bird from Paumanok,
Soaring and singing the idea
Of the inimitable all in all¹⁵

Of its parts, the song of each inseparable.
You will say at once that this road
To meaning appears far more uncertain
Than other methods, but I found
I could express such principles, maxims,
And precepts with more grace this way
Than in prose itself, like a bird building
Her nest, an action of instinct,
Of twigs and straw compounded into song.¹⁶

¹⁴Tagore, Rabindranath; *Creative Unity*. Walton, Izaak; *The Compleat Angler*. Bion; Moschus; Theocritus; Lang, Andrew; *Theocritus, Bion and Moschus*.

¹⁵Hawthorne, Nathaniel; *The Blithedale Romance*. Whitman, Walt; *Leaves of Grass*.

¹⁶Whitman. Freud, Sigmund; Hall, G. Stanley; *A General Introduction to Psychoanalysis*. Pope, Alexander; *The Rape of the Lock and Other Poems*. Butler, Samuel; *Unconscious Memory*.

COMPOSITION 3

But this is no law unto the wool of the neat *Retiarie* Spider, which seems to weave without transversion, and by the union of right lines to make out a continued surface, which is beyond the common art of Textury, and may still nettle *Minerva* the goddess of that mystery.¹⁷

Like a spider in the blackness of night an unseen hand had begun to run these dark lines, to turn and twist them about her life, to plait and weave a web.¹⁸

“High art” (says Myers) “is based upon unprovable intuitions; and of all arts it is poetry whose intuitions take the brightest glow, and best illumine the mystery without us from the mystery within.”¹⁹

This made *Minerva* still more furious, so she scolded *Ulysses* very angrily.²⁰

Weaving spiders, come not here;
Hence, you long-legg’d spinners, hence.²¹

¹⁷Browne; *Garden*.

¹⁸Grey, Zane; *Riders of the Purple Sage*.

¹⁹Mercer, John Edward; *Nature Mysticism*.

²⁰Homer; Butler, Samuel; *The Odyssey*.

²¹Shakespeare, William; *A Midsummer Night’s Dream*.

As for the beasts and birds, they are a piece
Of tapestry work. Passing through
The Strand only the other day, for instance,
I saw four brightly woven pictures
Of cock-fighting, which for imitative
Quality were about the best
That could be desired. Through all the weaving
The roosters strut, red fury woven
In a gentle fabric of greens and browns.²²

Although, when looking at these fine tapestries,
Dwell not on the picture alone,
But look also on the reverse; turn out
The rough seams, tatters, and knotted
Ends of the unsightly unseen wrong-side;
See thread become sinews, feathers,
Furious fighting spurs. But this is only
To affirm that every object
Is linked into every other object²³

By a multiplicity of relations,
That each part is woven into
The texture of a larger whole in a
Web of interpenetrations.
And so often I sat at my loom, and
Wove this net of similitude,
This music of things linked but by loose degrees,
The crowing of cocks, the cackling
Of hens, all the noise of the confused world.²⁴

²²Rabelais, Francois; Dor, Gustave; Motteux, Peter Anthony; Urquhart, Thomas, Sir; *Gargantua and Pantagruel*. Ruskin, John; *Aratra Pentelici, Seven Lectures on the Elements of Sculpture*. Nietzsche; *Zarathustra*. Crane, Stephen; *The Red Badge of Courage*.

²³Carlyle, Thomas; *Sartor Resartus*. Epictetus; Long, George; *A Selection from the Discourses of Epictetus with the Encheiridion*. Mercer.

²⁴Mercer. Wordsworth, William; *Poems in Two Volumes, Volume 2*. Rabelais.

COMPOSITION 4

Thou hast curiously embroydered me, thou hast wrought me up after the finest way of texture, and as it were with a Needle.²⁵

That thou hast given me life, I thank thee for what thou hast given.²⁶

When Thou hast done,
Thou hast not done,
For I have more.²⁷

Thou canst not kiss the woman thou hast loved; thou canst not kiss the child thou hast loved, nor canst thou smite those whom thou hast hated.²⁸

Martius, O Martius, Thou now hast found a way to conquer me.²⁹

²⁵Browne; *Garden*.

²⁶Epictetus.

²⁷Donne.

²⁸Mackenzie, Donald A.; *Myths of Babylonia and Assyria*.

²⁹Emerson; *Essays*.

She was at her loom, weaving a double
Purple web, with purple flowers
Embroidering it. Soft shadows cover
it, which I had not seen before:
The rocks less hard, the maples nearer bowed,
The stream more gentle; the shimmer
Of rushing water quenched my thirst. "String
My harp," I sang, "companion of
My music, come with me into the shade."³⁰

There, on the brink of a fountain shaded
By trees, she thought of her love, and
Softly joined her voice to my harp, recalling
Distant pains and nearer pleasures:
"My love doth tune my love unto his harp."
To sing high in the air, to chase
My mate over the low stone wall of the
Ploughed field, to battle with my high-
Crested rival, to balance on trembling³¹

Wings outspread above the earth, and utter
The kiss of song – O, longed-for sight!
Babylonian carpets, embroidered
With shapes of mythic animals
And exquisite designs, were not more famous
For subtleness of texture nor
For richness of color, than this picture,
Her Penelope's web, her loom
Always working and always never done.³²

³⁰Homer; Butler, Samuel; *The Iliad*. Jefferies. Bulfinch, Thomas; *Bulfinch's Mythology*.

³¹Bulfinch. Fletcher, Giles; Lodge, Thomas; Crow, Martha Foote; *Elizabethan Sonnet Cycles Phillis - Licia*. Jefferies.

³²Jefferies. Layard, Austen H.; *Discoveries among the Ruins of Nineveh and Babylon*. Bulfinch.

COMPOSITION 5

And beside this kinde of work in Retiarie and hanging tectures, in embroderies, and eminent needle-works; the like is obvious unto every eye in glass-windows.³³

I measure every grief I meet
With analytic eyes;
I wonder if it weighs like mine,
Or has an easier size.³⁴

We see in needle-works and embroideries, it is more pleasing to have a lively work, upon a sad and solemn ground, than to have a dark and melancholy work, upon a lightsome ground: judge therefore of the pleasure of the heart, by the pleasure of the eye.³⁵

No eye-glasses are rotten, no window is useless and yet if air will not come in there is a speech ready, there always is and there is no dimness, not a bit of it.³⁶

I receive upon a plate of window-glass the beam from our lamp; a great portion of the light reflected from the glass is polarized.³⁷

³³Browne; *Garden*.

³⁴Dickinson, Emily; *Poems*.

³⁵Bacon, Francis; *The Essays of Francis Bacon*.

³⁶Stein, Gertrude; *Tender Buttons*.

³⁷Tyndall, John; *Six Lectures on Light*.

A gray sky; a weathercock on a steeple
Just above the opposite range
Of buildings, pointing east; a spattering
Of hail taps across the window.
Light and color suspended in a summer
Evening, like color in stained glass,
Had been to me poised between the tangible
And the limpid, the reflected
And the real. Now, the crash of dim downfall,³⁸

Ruin, and dust-clouds fly in the gusting,
Quartering winter wind. Now, look
You in this translucent glass, and your youth
Past in this mirror see, even
As in a broken mirror, which in each
Fragment multiplies a partial
Image of what once was one, still the more
And the many, the more it breaks,
Like several mirrors in a circle, each³⁹

The picture of the next. This understanding
Is indeed my window: too clear
I can not make it. Where are the laughter
And smiles that made sweet music in
The summer shade? Through a small window shoots
A square of winter light across
The cold floor, where I sit and make crossbow-
Strings, and twist lines and weave purse nets
Wherein to catch the slanting winter light.⁴⁰

³⁸Hawthorne; *Blithedale Romance*. Jefferies. Carlyle, Thomas; *The French Revolution*.

³⁹Carlyle; *The French Revolution*. Drayton, Michael; Griffin, Bartholomew; Smith, William, fl. 1596; Crow, Martha Foote; *Elizabethan Sonnet Cycles: Idea, Fidesa and Chloris*. Byron, George; *Childe Harold's Pilgrimage*. Leonardo da Vinci; Richter, Jean Paul; *The Notebooks of Leonardo Da Vinci Complete*.

⁴⁰da Vinci. Carlyle; *Sartor Resartus*. Abbott, Lyman; Carman, Bliss; *The World's Best Poetry, Volume 3: Sorrow and Consolation*. Crane. Rabelais.

COMPOSITION 6

Nor only in Glassie contrivances, but also in Lattice and Stone-work, conceived in the Temple of Solomon; wherein the windows are termed *fenestras reticulatae*, or lights framed like nets.⁴¹

The angels that inhabit this temple of the body appear at the windows, and the gnomes and vices also.⁴²

My beloved is like a roe or a young hart: behold, he standeth behind our wall, he looketh forth at the windows, shewing himself through the lattice.⁴³

The evening sky to me is like a window, and a lighted lamp, and a waiting behind it.⁴⁴

In Nagasaki, very heavy damage to window frames and doors was observed up to 8,000 feet, and light damage up to 12,000 feet.⁴⁵

⁴¹Browne; *Garden*.

⁴²Emerson; *Essays*.

⁴³*Song of Songs*.

⁴⁴Tagore, Rabindranath; *Stray Birds*.

⁴⁵United States. Army. Corps of Engineers. Manhattan District; *The Atomic Bombings of Hiroshima and Nagasaki*.

The bow was strung, and the sword unsheathed.
Blood was shed in the sacred precincts;
Raiders shattered the gods, and their power
Was carried away. Granaries
Were plundered and standing crops were destroyed:
The city was leveled. "Look about
Our city and see," they said, standing
In the ashes, "we have no walls,
Not even for our gods." Then men came ⁴⁶

To melt the idols for swords. From temple
Columns they built tall and stout walls
To keep safe their gods, month after month lost
In putting one stone upon another,
Stones from ruined temples! Not a vestige
Of inscription remains which records
The name of the people. When a name is
Forgotten, can it be recalled?
There is still the wall, tall and stout, chocked ⁴⁷

With reused temple stones, the broken stones
Themselves a testament of loss.
Dimension stone, flint, rubble, brick unburnt
Or burnt, I use them as I find
Them to piece together a substitute.
But by what rules should I select
And arrange their broken and jumbled prayers?
Ordered this way or that, they say,
"Troy without a name, all her sons forgotten." ⁴⁸

⁴⁶Jastrow, Morris; *The Religion of Babylonia and Assyria*. Mackenzie. Parkman, Francis; *Montcalm and Wolfe*. Hall, Jennie; *Buried Cities: Pompeii, Olympia, Mycenae*.

⁴⁷Hall, Jennie. Volney, C.-F.; *The Ruins, or, Meditation on the Revolutions of Empires and the Law of Nature*. Layard. Freud. Hawthorne, Nathaniel; *The Scarlet Letter*.

⁴⁸Hawthorne; *Scarlet Letter*. Vitruvius Pollio; *The Ten Books on Architecture*. Freud. Coleridge, Samuel Taylor; *Biographia Literaria*. Virgil; Dryden, John; *The Aeneid English*.

COMPOSITION 7

**Sculptors in their strongest shadows, after this order doe
draw their double Haches.**⁴⁹

The sculptor's hand right well did Nicias fill;
And here the sculptor lavished all his skill.⁵⁰

The shadows had reached to the very summit of the bluffs
before the lodges were erected and the village reduced again to
quiet and order.⁵¹

I think with wonder I depicted me;
Whereat the shadow smiled and backward drew;
And I, pursuing it, pressed farther forward.⁵²

How perfect the effect of Wordsworth's lines:
The swan on still St. Mary's Lake
Floats double, swan and shadow!⁵³

⁴⁹Browne; *Garden*.

⁵⁰Theocritus; Calverley, Charles Stuart; *Theocritus, translated into English Verse*.

⁵¹Parkman; *Oregon Trail*.

⁵²Dante Alighieri; Longfellow, Henry Wadsworth; *Divine Comedy*.

⁵³Mercer.

How long in the city of destruction
Did I stay before I set out
After you on my pilgrimage? The night
Became day, the day again night.
There were short days and long; the moon waned faint
And waxed full, and heaven turned all
Of time around, turning the stars with it,
Turning me round and round like a
Windlass: asleep, awake, by night, by day.⁵⁴

Then I sought him that made the seven stars,
Who turns the night of death into
The morning and makes the day dark with night,
And found a daystar of hope hung
Before me, which daystar, however, turned,
Not into the red of morning,
But into a vague half-light, neither dawn
Nor day, nor dusk nor utter dark.
I asked then whether the true direction⁵⁵

Of the clouds can be known by the motion
Of their shadows, and in like way
The motion of the sun. Then the sun broke
Free. Long after the birds had left
Their nests, long after bees had come to gather
The heath honey before the dew
Was dried, when the morning shadows were long
Past, and the sun filled earth and sky,
I rose and turned, and I looked around me.⁵⁶

⁵⁴Bunyan, John; *The Pilgrim's Progress*. Carlyle; *The French Revolution*. Sunzi; *The Art of War*. Bullfinch. Melville. Abbot et al.

⁵⁵Mackenzie. Carlyle; *Sartor Resartus*. da Vinci.

⁵⁶da Vinci. Muir, John; *The Yosemite*. Bronte, Charlotte.

COMPOSITION 8

Now although this elegant ordination of vegetables, hath found coincidence or imitation in sundry works of Art, yet is it not also destitute of natural examples, and though overlooked by all, was elegantly observable, in severall works of nature.⁵⁷

But Natural Selection, we shall hereafter see, is a power incessantly ready for action, and is as immeasurably superior to man's feeble efforts, as the works of Nature are to those of Art.⁵⁸

Thus in art, does nature work through the will of a man filled with the beauty of her first works.⁵⁹

This truth, philosophy, though eagle-eyed
In nature's tendencies, oft overlooks;
And, having found His instrument, forgets
Or disregards, or, more presumptuous still,
Denies the power that wields it.⁶⁰

Now art and its work, as creations of the mind, are themselves of a spiritual nature.⁶¹

⁵⁷Browne; *Garden*.

⁵⁸Darwin, Charles; *Origin of Species*.

⁵⁹Emerson, Ralph Waldo; *Nature*.

⁶⁰Cowper, William; *The Task, and Other Poems*.

⁶¹Schiller, Friedrich; *Aesthetical Essays*.

Here were sweet-smelling clover, timothy,
Flowers, and vegetables profuse.
“One of us at least has been without bread,
And without salt,” they said, “Abide
Here in our customs, thou: eat this bread,
Drink this wine, and let some gladness
Return to thee!” Some grains of corn were shown
To me. I was given the bread
Of it, small, square loaves set on a platter⁶²

Like a flat wreath of wheat ears, the rim inscribed,
“What induces the bee, who lives
On honey, to lay up pollen for its
Queen? Why is corn reaped and threshed?”
Beasts, fire, water, stones, and corn serve us,
But the force and nature of time
I desire to know, the plain structure
Of the whole system of systems.
We know that most of our innovations⁶³

Are leaps from field to field, that the poet
Plants corn in this field which was gleaned
From another. On these same thoughts I chewed
A long while, a taste like fine bread,
Until they flowed with goodness like the taste
Of milk and honey, that I might
Come into my garden, and drink my wine,
Fragrant with cloves and cardamon:
“Eat, O friends; eat and drink abundantly!”⁶⁴

⁶²Grey, Zane. Parkman; *Oregon Trail*. Nietzsche; *Zarathustra*. Swedenborg, Emanuel; *Earths In Our Solar System*. Jefferies.

⁶³Jefferies. Butler; *Evolution*. Epictetus. Emerson; *Nature*. Augustine; Pusey, E. B.; *The Confessions of St. Augustine*. Ullman, Harlan; Wade, James P.; *Shock and Awe Achieving Rapid Dominance*. Hart, Michael; *A Brief History of the Internet*.

⁶⁴Hart. Nietzsche; *Zarathustra. Song of Songs*.

COMPOSITION 9

And how in animall natures, even colours hold correspondencies, and mutuall correlations.⁶⁵

Now among them that were yet of a more excellent nature, as the stars and planets, though by their nature far distant one from another, yet even among them began some mutual correspondency and unity.⁶⁶

And then I found that the Shadows of all Bodies held in the colour'd Light between the Prism and the Wall, were border'd with Fringes of the Colour of that Light in which they were held.⁶⁷

And Nature holds this like a mirror up
Of time-to-be when we are dead and gone.⁶⁸

The same distinction holds good in respect to the nature of the poet.⁶⁹

⁶⁵Browne; *Garden*.

⁶⁶Marcus Aurelius, Emperor of Rome; *Meditations*.

⁶⁷Newton, Isaac, Sir; *Opticks or, a Treatise of the Reflections, Refractions, Inflections, and Colours of Light*.

⁶⁸Lucretius.

⁶⁹Schiller.

Taking his own body as the idea
For living forms, measuring it,
Explaining it, and comparing its parts,
He saw but small differences
Between forms. Dissecting the ape he saw
The shape of man, the same bones, flesh,
And play of action: heart, veins, arteries,
The organs of circulation
And respiration, all of them composed⁷⁰

In the same manner, the system always
The same, from primates to quadrupeds,
From quadrupeds to birds, from birds to fishes;
This system, if comprehended,
Is a true copy of nature, where we
May see the plan descend through lizards,
Insects, worms, zoophytes, and plants, keeping
Yet ever the same unity
In spite of details, of all organic⁷¹

Bodies the common trait, an eternal
Essence divinely implanted.
Hold it thus sacred that terms be exact.
If our terms are found correct,
Our knowing will be easy; if not,
Into sound forms duty ought shape
Our terms, not from words dwarved and weak,
But with the knitting and number
That kind in series derives from like kind.⁷²

⁷⁰Butler; *Evolution*.

⁷¹Butler; *Evolution*.

⁷²Butler; *Evolution*. Aristotle; Edghill, E. M.; *The Categories*. Jonson, Ben; Morley, Henry; *Discoveries Made Upon Men and Matter and Some Poems*.

COMPOSITION 10

Studious Observators may discover more analogies in the orderly book of nature, and cannot escape the Elegancy of her hand in other correspondencies.⁷³

Now among them that were yet of a more excellent nature, as the stars and planets, though by their nature far distant one from another, yet even among them began some mutual correspondency and unity.⁷⁴

And a quick conception of distant analogies, which is the great key to unlock the secret of nature, is by no means incompatible with the spirit of *perseverance*, in investigations calculated to ascertain and pursue those analogies.⁷⁵

According to you, therefore, the true nature of a thing is discovered by the senses.⁷⁶

Take any analogy of Nature, and see what such an analogy teaches us.⁷⁷

⁷³Browne; *Garden*.

⁷⁴Marcus Aurelius.

⁷⁵Priestley, Joseph; *Experiments and Observations on Different Kinds of Air*.

⁷⁶Berkeley, George; *Three Dialogues Between Hylas and Philonous in Opposition to Sceptics and Atheists*.

⁷⁷Hooper, William George; *Aether and Gravitation*.

Like swallows feathering their nests with froth,
Or like alarmed and fluttering
Birds, the birds of fate which sang to Siegfried;
Like the song of beatified
Souls a harper sings, his hand on his harp,
A song of passion and pathos;
Like bagpipers on distant highland hills,
And the weight of cathedral psalms,
Or the light silently enfolding all.⁷⁸

Like some fierce hero on a tapestry,
And a lover's flattering smile,
By a shaded fountain safe and certain;
Like the earth circling through time,
And the sun when freed from clouds, and the moon,
Which persuades the sea to its height;
Like seed among the heavenly bodies,
The sun, moon, and stars, and eating
The sun and moon, like nectar and ambrosia⁷⁹

In one, or bread in the hands of a child;
Like philosophy from an older
World, and like the sun and moon, they end but
To begin anew; like the four
Seasons, they pass away to return once
More; like the thousands of copies
Of each part of a complicated machine,
An equal number of machines
Assembled and set to work in motion.⁸⁰

⁷⁸Thoreau, Henry David; *A Week on the Concord and Merrimack Rivers*. Cooper, James Fenimore; *The Last of the Mohicans*. Mackenzie. Carlyle; *Sartor Resartus*. Mercer. Hawthorne; *Scarlet Letter*. Coleridge; *Biographia Literaria*. Dickinson. Whitman.

⁷⁹Pope. Abbot et al. Dante. Swedenborg. Muller, F. Max; *Dhammapada*. Nietzsche; *Zarathustra*. Bullfinch. Confucius; *The Sayings Of Confucius*. Homer; *Odyssey*.

⁸⁰Homer; *Odyssey*. da Vinci. Allen, Grant; *Falling in Love; With Other Essays on More Exact Branches of Science*. Sunzi. Thompson, Holland; *The Age of Invention*.

COMPOSITION 11

I made me Gardens and Orchards, and planted Trees in them of all kinds of fruit.⁸¹

Of the *Hort-Yard* and *Potagere*; and what *Fruit-Trees*, *Olitory* and *Esculent Plants*, may be admitted into a Garden of Pleasure.⁸²

In all Towns, Trees of Liberty also may be planted; with or without advantage.⁸³

Trees and plants, in their early growth, are soft and brittle; at their death, dry and withered.⁸⁴

Visit this vine, which was planted by thy Holy Spirit, and grant it to bear fruit, the fruit of righteousness.⁸⁵

⁸¹Browne; *Garden*.

⁸²Evelyn, John; *Acetaria: A Discourse of Sallets*.

⁸³Carlyle; *The French Revolution*.

⁸⁴Laozi; Legge, James; *The Tao Teh King, or the Tao and its Characteristics*.

⁸⁵John of Damascus, Saint; *Barlaam and Ioasaph*.

His apparatus was a pendulum
Arranged to swing across a slip
Of paper, marking a change in numbers,
The numbers pointing toward words,
All of which made poems, regulating
All their motions, and producing
Their order, unity and harmony.
They were made as it is proper:
Embodied, tangible, and exhalable.⁸⁶

He made him the poems of materials,
The most spiritual poems,
The poems of his body and his soul.
And the titles he issued were:
Making a Garden with Hotbed and Coldframe;
Planting a Garden of Perennials;
Sowing a Garden of Annual Flowers;
Trimming Shrubbery and Trees, and
Tending a Garden of Antique Roses.⁸⁷

Having thus described the apparatus,
Which I hope shortly to show you
In action, I turn to the information
Obtained by it, although experience
Suggests that even after the instructions
Have been followed with the greatest
Possible zeal, the reader will still halt
Over passages in the book
Before us, and wonder what they might mean.⁸⁸

⁸⁶Steele, James W.; *Steam, Steel and Electricity*. Stein. Hooper. Smith, Adam; *An Inquiry into the Nature and Causes of the Wealth of Nations*. Carlyle; *The French Revolution*.

⁸⁷Whitman. Adams, H. S.; *Making A Rock Garden*.

⁸⁸Worthington, A. M.; *The Splash of a Drop*. Nietzsche; *Zarathustra*.

COMPOSITION 12

By this position they had a just proportion of Earth, to supply an equality of nourishment.⁸⁹

Why do they all draw their nourishment from roots as from a mouth dipped into the earth, and distribute the strong bark over the pith?⁹⁰

It never quits the nest, but the ants bring it in food and supply it by putting the nourishment actually into its mouth.⁹¹

The money price of an article at any given period is usually stated to depend upon the proportion between the supply and the demand.⁹²

We are now in a position to compare the proportion of the centripetal and centrifugal forces.⁹³

⁸⁹Browne; *Garden*.

⁹⁰Boethius; James, H. R.; *The Consolation of Philosophy*.

⁹¹Allen.

⁹²Babbage, Charles; *On the Economy of Machinery and Manufactures*.

⁹³Hooper.

But first he was poor; after he had paid
His father's debts, his patrimony
Was a crumbling grange, a row of scathed
Firs, and a patch of moorish soil,
Lean and lying bare, the vines meager and starved.
But he knew that in certain fields,
The sheep that graze upon them grow more fat
Than on the next, and also bear
Finer wool, and that if he caught a trout⁹⁴

In one meadow, it would be thin and faint,
But if he caught one in another,
It would be much better and fatter meat.
From the Romans he learned things which
We practice here: to plow under the green
Manure; to gather, chop and compost
Fallen leaves; to test the soil for sourness,
And to conserve the sweet; to turn
A fallow field, to tend its culture too.⁹⁵

He collected fallen leaves from hedge rows,
And shoveled droppings from the byway;
He cut ferns from his neighbours land; and all
This he mingled with the sweepings
Of his courtyard, with ashes, sewage, straw,
And rubbish. He composed natural
Growth thus in the rich soil of his own verse,
Wherein the merest stick of a
Line blossomed and bore its fruit in season.⁹⁶

⁹⁴Bronte, Charlotte. Cato et al. Walton.

⁹⁵Walton. Cato et al.

⁹⁶Cato et al. Lowell, James Russell; *Among My Books. Second Series*.

COMPOSITION 13

The like concerning the growth of Misseltoe, which dependeth not only of the *species*, or kinde of Tree, but much also of the Soil.⁹⁷

These were huge, cove-like blind pockets extending back to a sharp corner with a dense growth of underbrush and trees.⁹⁸

Densities, growth, facades,
Strata of mountains, soils, rocks, giant trees,
Far-born, far-dying, living long, to leave,
Eidolons everlasting.⁹⁹

Not only has a forest a character of its own, which arises from the fact that it is a community of trees, but each species of tree has peculiar characteristics and habits also.¹⁰⁰

Marcellus' fame, its up-growth hid,
Springs like a tree; great Julius' light
Shines, like the radiant moon amid
The lamps of night.¹⁰¹

⁹⁷Browne; *Garden*.

⁹⁸Grey, Zane.

⁹⁹Whitman.

¹⁰⁰Pinchot, Gifford; *The Training of a Forester*.

¹⁰¹Horace; Conington, John; *The Odes and Carmen Saeculare of Horace*.

When studying of the reproduction
And habits of different trees,
And to increase the forest's timber sales,
The forester should plant test plots
For finding the best relation of each
Species to light, heat, and moisture.
The field where he conducts experiments
Should be divided into plots
Of equivalent measure, and from each¹⁰²

Plot the results should be carefully weighed,
Giving some basis for assessing
The collection of seeds, their fertility
And vitality, the best methods
Of seeding and planting, and all the fruit
Of past failures and successes.
He can try experiments on plots small
Or large, together or apart;
Whether or not any succeed or fail¹⁰³

Is of no great importance for this line
Of inquiry, for by the test
Itself the conditions of life are changed.
Every line of these results
Is worthy of close study, not only
For any intrinsic beauty,
Or for the evidence of the working
Out of immanent ideas,
But for the command of measure and number.¹⁰⁴

¹⁰²Pinchot. Aikman, Charles Morton; *Manures and the principles of manuring*.

¹⁰³Aikman. Pinchot. Coleridge; *Biographia Literaria*. Darwin, Charles; *Origin of Species*.

¹⁰⁴Darwin, Charles; *Origin of Species*. Mercer.

COMPOSITION 14

Whether the intellectual and phantastical lines be not thus rightly disposed, but magnified, diminished, distorted, and ill placed in the Mathematicks of some brains, whereby they have irregular apprehensions of things, perverted notions, conceptions, and incurable hallucinations, were no unpleasant speculation.¹⁰⁵

Which ill-practices of theirs, though they quiet things for a time, must in the end exhaust their resources, and give rise in seasons of danger to incurable mischief and disorder.¹⁰⁶

The sum total of my moral and intellectual intercourse, dissolved into its elements, is reduced to extension, motion, degrees of velocity, and those diminished copies of figurative motion, which form what we call notions, and notions of notions.¹⁰⁷

Whereby it comes to pass that goodness is rightly believed to be the sum and hinge and cause of all things desirable.¹⁰⁸

And at first, this sort of thing is unpleasant enough.¹⁰⁹

¹⁰⁵Browne; *Garden*.

¹⁰⁶Machiavelli, Niccol; Thomson, Ninian Hill; *Discourses on the First Decade of Titus Livius*.

¹⁰⁷Coleridge; *Biographia Literaria*.

¹⁰⁸Boethius.

¹⁰⁹Melville.

The reviewers laughed while poets pillaged,
Particularly Byron, who
Wore a line from Wordsworth, incongruous
As vestments on a trollop's back.
So virtuosos plodded, groaning under
The weight of newest invention,
Always pricked on by hope for the success
Of new experiments, all while
The treasures of the past lie unguarded.¹¹⁰

Borrowed culture and purloined languages
Wear defaced (erased!) maker's marks:
Aristotle is thought to have borrowed
His system of categories,
And in natural philosophy said
Nothing but such as was taken
From others. Theocritas sings, "Off, my lambs,
See ye not Virgil, he who stole
My shepherd's pipe right from under my nose?"¹¹¹

With tricks and legerdemains Mercury
Cloaks his thefts: I have learned from him
How to walk without feet, see without eyes,
Hear without ears, fly without wings:
I crept toward a glimmering fire,
And stole a great piece of fat meat.
And when I had done this, I fed a blind
Man with ideas of color,
A deaf man with a true notion of sound.¹¹²

¹¹⁰Lowell. Erasmus, Desiderius; Holbein, Hans; *In Praise of Folly Illustrated with Many Curious Cuts*. Nietzsche; *Zarathustra*.

¹¹¹Semple, Ellen Churchill; *Influences of Geographic Environment On the Basis of Ratzel's System of Anthro-Geography*. Cicero, Marcus Tullius; Yonge, Charles Duke; *The Academic Questions, Treatise De Finibus, and Tusculan Disputations*. Bion et al. Shakespeare, William; *The Tempest*.

¹¹²Erasmus, Desiderius; Wilson, John; *The Praise of Folly*. Kabir; Tagore, Rabindranath; *Songs of Kabir*. Cooper. Parkman; *Oregon Trail*. Locke, John; *An Essay Concerning Humane Understanding*.

COMPOSITION 15

**And since there are found some of no fewer than twelve,
and some of seven and nine, there are few or none
discovered of six or eight?**¹¹³

Twelve year since, Miranda, twelve year since,
Thy father was the Duke of Milan, and
A prince of power.¹¹⁴

It seems to be a sort of Talk, and is found in form of an oblique
Parallelopiped, with six parallelogram Sides and eight solid
Angles.¹¹⁵

Let me see: four times five is twelve, and four times six is
thirteen, and four times seven is—oh dear!¹¹⁶

One—two—three—four—five—six—seven—eight—nine—ten.¹¹⁷

¹¹³Browne; *Garden*.

¹¹⁴Shakespeare; *Tempest*.

¹¹⁵Newton; *Optics*.

¹¹⁶Carroll, Lewis; *Alice's Adventures in Wonderland*.

¹¹⁷Sterne, Laurence; *The Life and Opinions of Tristram Shandy, Gentleman*.

And have not we discovered a number
Of varied and surprising things?
Identity, relation, co-existence,
Real existence; an infinite
Sequence of other such definitions;
That nothingness equals the whole,
And the whole the part, and that the sum
Is the same whether we add or
Subtract, if first we begin with nothing? ¹¹⁸

Few occupations are more wearisome
Than counting the paces we walk;
Thus an instrument, the pedometer,
Which counts the steps of our feet.
The gene sequencers in laboratories,
Computer-aided design tools
Used by engineers, vast database systems
In corporate offices, are
All alike means of counting our steps. ¹¹⁹

Ye pastoral muses, farewell! My muse
Is of a new, electric strain.
So, count, Electric Muse, who, then though still
Unpowered, ignited the bard
Who first taught how heaven and earth first
Rose out of dark chaos: I invoke
Thy aid to my combinatory song,
Which to no middle flight intends
While it gathers these scraps from verse and prose. ¹²⁰

¹¹⁸Freud. Locke, John; *An Essay Concerning Humane Understanding*. da Vinci.

¹¹⁹Babbage. Ullman.

¹²⁰Bion et al. Drayton. Milton, John; *Paradise Lost*.

GENERATION

GENERATION 1

How little is required unto effectual generation, and in what deminutives the plastick principle lodgeth, is exemplified in seeds, wherein the greater mass affords so little comproduction.¹²¹

To drop seeds into the ground, and attend their growth, requires little labour and no skill.¹²²

For I easily foresee it will be alledged, that the above mentioned Examples are all taken from Plants, and Animals, in whom the Matter is Fashioned by the Plastick power of the seed, or something analogous thereunto.¹²³

A seed shall serve him; it shall be accounted to the Lord for a generation.¹²⁴

Affords this art no greater miracle?¹²⁵

¹²¹Browne; *Garden*.

¹²²Johnson, Samuel; *Journey to the Western Islands of Scotland*.

¹²³Boyle, Robert; *The Sceptical Chymist or Chymico-Physical Doubts & Paradoxes*.

¹²⁴*Psalms*.

¹²⁵Marlowe, Christopher; Dyce, Alexander; *The Tragical History of Doctor Faustus*.

Let us stay long; these terrestrial gaities,
Which quickly come and quicker go,
Command us to plant ourselves in them,
To see here a more glorious
Garden, where all the trees are trees of life;
The flowers are all amaranths,
No forbidden fruit, no serpent to deceive.
Walk you here, where the dew still hangs
On every flower, the sunbeams dart,¹²⁶

And the checkerboard shadows dance, and see
On honeysuckle the sheep graze
Contented beneath the cedar, cypress,
And pine. Why is the honeysuckle,
That rides the air so rich, all, all sheared away?
And why along the cropped hedges
Does the red campion flower? Once a
Youth named Campion, whom Minerva
Employed to catch mice for her owls to eat,¹²⁷

Napped beneath a shaded hedge of honeysuckle
When he ought to have been at work.
So the goddess changed him into a flower,
And planted him next to the hedge
Of honeysuckle. The honeysuckle
She perfumed to entice the sheep
To graze until the hedge is so leafless
That it no longer affords shade,
And the sun rouses Campion from his sleep.¹²⁸

¹²⁶Evelyn, John; Nisbet, John; *Sylva, Vol. 1 (of 2) Or A Discourse of Forest Trees*. Radcliffe, Ann Ward; *The Mysteries of Udolpho*.

¹²⁷Radcliffe. Theocritus. Hopkins, Gerard Manley; Bridges, Robert; *Poems of Gerard Manley Hopkins*. Jefferies. Anonymous; *Fishes, Flowers, and Fire as Elements and Deities in the Phallic Faiths and Worship of the Ancient Religions of Greece, Babylon, .*

¹²⁸Anon; *Fishes, Flowers, and Fire*.

GENERATION 2

The exiguity and smallnesse of some seeds extending to large productions is one of the magnalities of nature, somewhat illustrating the work of the Creation, and vast production from nothing.¹²⁹

The love of Nature's works
Is an ingredient in the compound, man,
Infused at the creation of the kind.¹³⁰

Certainly, and without doubt, all technical creations are the work of nature; but it is not by the fact of nature that they are technical, or at least that they are so judged to be.¹³¹

This is a real creation; a production of something out of nothing: Which implies a power so great, that it may seem, at first sight, beyond the reach of any being, less than infinite.¹³²

Aristotle with all his Philosophy hath not been able to prove it, and as weakly that the world was eternal; that dispute much troubled the Pen of the Philosophers, but *Moses* decided that question, and all is salved with the new term of a Creation, that is, a production of something out of nothing; and what is that?¹³³

¹²⁹Browne; *Garden*.

¹³⁰Cowper.

¹³¹Schiller.

¹³²Hume, David; Selby-Bigge, L. A., Sir; *An Enquiry Concerning Human Understanding*.

¹³³Browne, Thomas, Sir; *Religio medici*.

The adventitious production of buds
Often follows decay or wound:
Leaf-buds change into flower-buds by bruising
The bark or strangling a branch.
This occurs now and then in roses, when
A shoot, instead of lengthening,
Bears a flower-bud, which begins to unfurl
And show color, every shade
Of purple and every hue of crimson. ¹³⁴

Some plants (willows, poplars, elms) form buds when
Nipped by hard frosts; the observer,
If keen, can watch them thrive, new leaves and boughs
Emerging from old injury,
And so he prunes his vineyard and orchard.
At first they shrink from steel, but soon
Bud forth in fruit-bearing vines and branches,
The yearly abrasion and decay
Making the power of their future growth. ¹³⁵

Short ends of threads and narrow shreds of lists,
Knots, snarled ruffs, loose broken tufts
Of twists, are the ragged clothes of my torn
Meditations, which, wound and woven,
Shape a thought not precisely out of nothing,
But out of a slow and patient
Unraveling, like a hard winter's frost,
Or like a farmer's pruning saw
And shears, so full of purpose and intention. ¹³⁶

¹³⁴Masters, Maxwell T.; *Vegetable Teratology*. Darwin, Erasmus; *The Botanic Garden*. Burnett, Frances Hodgson; *The Secret Garden*.

¹³⁵Apgar, A. C.; *Trees of the Northern United States*. Carlyle; *The French Revolution*. Cato et al. Virgil; *The Georgics*. Thoreau.

¹³⁶Coleridge; *Biographia Literaria*.

GENERATION 3

From such undiscernable seminalities arise spontaneous productions.¹³⁷

It is not spontaneous fraternity, but legal fraternity.¹³⁸

We love characters in proportion as they are impulsive and spontaneous.¹³⁹

This proves that the plumule has an innate or spontaneous tendency to arch itself.¹⁴⁰

It is one that, for want of a better name, has been called “spontaneous variation;” which means that when we do not know anything about the cause of phenomena, we call it spontaneous.¹⁴¹

¹³⁷Browne; *Garden*.

¹³⁸Bastiat, Frederic; *Essays on Political Economy*.

¹³⁹Emerson; *Essays*.

¹⁴⁰Darwin, Charles; Darwin, Francis, Sir; *The Power of Movement in Plants*.

¹⁴¹Huxley, Thomas Henry; *The Perpetuation of Living Beings*.

On a lake float with many swans tame seeming
Fancy pleasure boats rowed by lovers.
And she gazed across the lake and murmured,
“Loveliness unfathomable,
As ever lover saw in lover’s eye!
Even this night, O Swan, arise
And play for me the music meant for me,
Like the swan who wooed fair Leda
And that Leda caressed between her thighs.”¹⁴²

Change into a hundred shapes and figures,
Into a swan, a bull, a satyr,
A shower of gold, as when Jupiter
First unmaiden his sister;
Into an eagle, a ram, or a dove,
As when he loved the virgin Phthia;
Into a fire, a flea, an atom;
Into all the sly intentions
Admitted by first meetings and unions.¹⁴³

We are admitted to a feather dance,
Performed by a dancing-master,
Who holds feathered wands, made from the feathers
Of swans, and who moves as they move,
With us in step and in time with his steps;
And like swans and shadows doubled
By the distance between the lake and sky,
We are welded with no joint save
The luminous space between ripe affections.¹⁴⁴

¹⁴²Coleridge; *Biographia Literaria*. Melville. Kabir. Volney. Bullfinch.

¹⁴³Rabelais. Cicero.

¹⁴⁴Parkman; *Montcalm*. Wordsworth; *Poems*. Conrad, Joseph; *Heart of Darkness*.

GENERATION 4

In Acorns the nebb dilating splitteth the two sides, which sometimes lye whole, when the Oak is sprouted two handfuls.¹⁴⁵

Sometimes the water, foaming among the stones, overspread the whole narrow passage; sometimes, withdrawing to one side, it gave us room to pass dry-shod.¹⁴⁶

In front they were accordingly armored two and a half inches over two feet of solid oak.¹⁴⁷

And this Colour, after the aforesaid manner, dilated it self downwards, until sometimes it hath overspread the whole Bubble.¹⁴⁸

This glacier, as a whole, resembled an oak, with a gnarled swelling base and wide-spreading branches.¹⁴⁹

¹⁴⁵Browne; *Garden*.

¹⁴⁶Parkman; *Oregon Trail*.

¹⁴⁷How, Louis; *James B. Eads*.

¹⁴⁸Newton; *Optics*.

¹⁴⁹Muir, John.

Let us go up early to our vineyard,
And see if our vines flourish
And our pomegranates blossom:
A solitude of bees and birds,
Fearless and full of life, sweetness of dew
And rifts of sunshine, the dark shade
Beneath the budding hawthorn, the cool calm
Of the soft breeze, the rising heat
And surge of restive lovers' eyes and hands.¹⁵⁰

The bowers of yesterday, the arcades,
The archways, still stand like always,
Freshly decked with flowers during the night
By unknown hands, and another
Day's sunshine has opened the coppice buds,
Like seeds from our garden's trees,
And from our seed the flowers, the fruits,
And the shade: so within the body
The germ, and within the germ the body.¹⁵¹

And the earth brings forth grass, and grass after
Its kind yielding seed, and tree yielding
Fruit, whose seed after its kind is in itself:
And we saw that it is lovely.
Cause and effect, means and ends, seed and fruit,
Cannot be severed; for the effect
Already blooms in the cause, the same end
Preexists in the means, the fruit
Of blood and heat flowering between us.¹⁵²

¹⁵⁰*Song of Songs*. Byron. Jefferies. Lucretius.

¹⁵¹Arnold, Edwin Lester Linden; *Gulliver of Mars*. Kabir.

¹⁵²*Genesis*. Emerson; *Essays*.

GENERATION 5

But as they begin from one part, so they seem to start and set out upon one signall of nature.¹⁵³

I am a Turk if I had not as much forgot my mother, as if Nature had plaistered me up, and set me down naked upon the banks of the river Nile, without one.¹⁵⁴

The sun was beginning to set and sending deep gold-colored rays slanting under the trees when they parted.¹⁵⁵

The cricket sang,
And set the sun,
And workmen finished, one by one,
Their seam the day upon.¹⁵⁶

The Minerals began to grow and encrease by converting into their own Nature one part of the Earth thereunto dispos'd; they were solid and heavy.¹⁵⁷

¹⁵³Browne; *Garden*.

¹⁵⁴Sterne.

¹⁵⁵Burnett.

¹⁵⁶Dickinson.

¹⁵⁷Boyle; *Sceptical Chymist*.

As if an impatient hand had cast them
Into the sky, a thousand starlings
Were flung up from the oaks; then down they fell
Again; a wave of ceaseless calling,
Up they went and down, like ocean swells rolling
Above the trees. Blackbirds in dense
Flocks winged their way along the river's course,
As if on a short pilgrimage,
Or to celebrate so fair a sunset.¹⁵⁸

Heaven is full of the traffic of birds;
A pigeon flies to a distant
Copse; a bluejay starts from an ash and speeds
To a thick corner hedge; the air
Is full of larks. The clouds, as if tired
Of the chase, break apart, gathering
In black masses about the horizon,
The lighter scud hurrying above,
Like a flock of birds returning its roost.¹⁵⁹

The ordered motion of the stars and planets,
An eclipse of the sun or moon,
The flight of birds and the barking of dogs,
The rustling leaves against the door,
The glitter and color of precious stones,
The movements of snakes and serpents,
Peculiar marks on the bodies of children,
Monstrosities among mankind:
Sensations from sensations begotten.¹⁶⁰

¹⁵⁸Jefferies. Thoreau.

¹⁵⁹Jefferies. Cooper.

¹⁶⁰Jastrow. Lucretius.

GENERATION 6

Wherein in Lozenge figured boxes nature shuts up the seeds, and balsame which is about them.¹⁶¹

The lyre, cornet, and tambourine speak of music, and the figures of Fame and Hope are hardly to be misunderstood, but the large box in the background is not quite certain of correct interpretation.¹⁶²

Fecund nature begets and squanders thousands of these rich seeds in the wilderness of life.¹⁶³

This is nature's nest of boxes: the heavens contain the earth; the earth, cities; cities, men.¹⁶⁴

One evil only did not fly out of the box: Pandora shut the lid at the behest of Zeus and it remained inside.¹⁶⁵

¹⁶¹Browne; *Garden*.

¹⁶²Vincent, W. T.; *In Search of Gravestones Old and Curious*.

¹⁶³Wister, Owen; *The Virginian, a Horseman of the Plains*.

¹⁶⁴Donne.

¹⁶⁵Nietzsche, Friedrich Wilhelm; *Human, All Too Human*.

“Here,” she said, “take this box and go your way
To Proserpine, and hand the box
To her and say, ‘my mistress desires
Your beauty, for hers has grown faint.’”
It was little box, covered with figures
Of harpies, satyrs, bridled geese,
Saddled ducks, flying goats, and other such
Counterfeited pictures, to hold
Ambergris, musk and civet of great price,¹⁶⁶

Much as artisans furnish a lady's
Chamber with a precious casket
Filled with the spirit of roses, orange-
Flower-water, and angelica.
“And,” she added, “when Proserpine has filled
The box with her beauty, never,
Not once, allow your curiosity
To pry into the secret of
The fragrant beauty of the goddesses.”¹⁶⁷

The messenger went and came, his errand
Done, the box lid raised but a crack,
And such perfume flowed streaming out that both
Fell silent; and, though she wished she
Might deny her nature, and be ever
More still, with soft and scented voice
She spoke, like the fragrance new between them:
“Look, what a sweet-smelling youth comes
To court me in the rose-filled bower's shade!”¹⁶⁸

¹⁶⁶Bullfinch. Rabelais.

¹⁶⁷Rabelais. Bullfinch.

¹⁶⁸Whitman. Radcliffe. Horace.

GENERATION 7

A like ordination there is in the favaginous Sockets, and Lozenge seeds of the noble flower of the Sunne.¹⁶⁹

Here, for instance, is a stellar shape, every lozenge of the star being a film of gypsum of uniform thickness: each lozenge, you observe, shows a brilliant and uniform colour.¹⁷⁰

The seeds of broom, vomit, and purge, whilst the buds, and flowers being pickled, are very grateful.¹⁷¹

As the seed is within the banyan tree, and within the seed are the flowers, the fruits, and the shade: So the germ is within the body, and within that germ is the body again.¹⁷²

The flower is the end or proper object of the seed, not the seed of the flower.¹⁷³

¹⁶⁹Browne; *Garden*.

¹⁷⁰Tyndall, John.

¹⁷¹Evelyn; *Sylva*.

¹⁷²Kabir.

¹⁷³Ruskin, John; *The Queen of the Air*.

Proserpine signifies the golden seed-
Corn which when cast into the ground
Lies there concealed, borne to the underworld.
With plants there is a vast destruction
Of seeds; the seedlings suffer most from falling
On ground already thickly sown
With other seed, each little spot crowded,
All pressed on, persuing and pursued,
All crushed in crowds, a mingled multitude.¹⁷⁴

All this is a tragical combustion,
With plot and riot and tumult
By night and by day, a dark combustion,
And one cannot help noticing
The high rivalry between them, the riots
And bloodshed and many successions
From angry words to manual brawl to
Riots and revolts with the festering
Sorrows they leave. The Galli come, their fists¹⁷⁵

Pounding on hollow cymbals and tight-skinned
Tambours; fierce horns threaten; bagpipes
Excite their maddened minds; they bear before
Them wild emblems of their frenzy.
These are Prosperine's Galli, elect
Of the seed borne to the underworld,
Who have the power to panic the rabble's
Ingrate heads and impious hearts
With mindless terror of the goddess's might.¹⁷⁶

¹⁷⁴Bullfinch. Darwin, Charles; *Origin of Species*. Parkman; *Oregon Trail*. Virgil; *Aeneid*.

¹⁷⁵Carlyle; *The French Revolution*. Marcus Aurelius. Lucretius.

¹⁷⁶Lucretius.

GENERATION 8

To omit the lower observations in the seminal spike of Mercurie weld, and Plantane.¹⁷⁷

The entire member seems a dense webbed bed of welded sinews; but cut into it, and you find that three distinct strata compose it:—upper, middle, and lower.¹⁷⁸

For this were a confusion of corruptive and seminal production, and a frustration of that seminal power committed to animals at the Creation.¹⁷⁹

His notes and observations on every book are of the same excellency, and for the same reason I omit the greater part.¹⁸⁰

The attempt to get a higher form of a life from a lower one is in accordance with our observation and experience.¹⁸¹

¹⁷⁷Browne; *Garden*.

¹⁷⁸Melville.

¹⁷⁹Browne, Thomas, Sir; *Pseudodoxia epidemica*.

¹⁸⁰Dryden, John; *Discourses on Satire and on Epic Poetry*.

¹⁸¹Butler; *Unconscious Memory*.

The forms of things lie deeper than we know;
Seminal principles are not
Found in the divided atoms of things,
But in the turbulent ocean
Of nature, where they hit upon matching
Materials, unite, and turn
Back to a recollection of themselves.
You may have observed small water
Insects on the surface of rivulets,¹⁸²

Winning their way against the stream in pulses
Of active and passive motion,
Now resisting the current, and then yielding;
Seen the minutest of insects
Suspended in a pool of luminous
Water; or spied a motionless
Fish within the shadow of a lily pad,
Still, circumspect, and voracious,
A potential ambush its only purpose.¹⁸³

And so we glide away with even sweeps,
The fates spread oil on our course,
And the sun now sinks behind the alders
On the distant shore; we can still
See them far off over the water, swimming
Over the rocks and fallen trees,
The unsympathizing river ever
A most effectual barrier
To their progress toward their soon found selves.¹⁸⁴

¹⁸²Browne; *Pseudodoxia*. Coleridge; *Biographia Literaria*.

¹⁸³Coleridge; *Biographia Literaria*. Darwin, Erasmus; *Botanic Garden*. Thoreau.

¹⁸⁴Thoreau.

GENERATION 9

And even that seeds themselves in their rudimentall discoveries, appear in foliaceous surcles, or sprouts within their coverings, in a diaphanous gellie, before deeper incrassation, is also visibly verified in Cherries, Acorns, Plums.¹⁸⁵

Even strongly-marked differences occasionally appear in the young of the same litter, and in seedlings from the same seed-capsule.¹⁸⁶

Even so ye also outwardly appear righteous unto men, but within ye are full of hypocrisy and iniquity."¹⁸⁷

Has man within him an immortal seed?¹⁸⁸

Seeds within seeds, and bulbs within bulbs.¹⁸⁹

The alchemists declare that quicksilver
Is the seed of every metal,
Ignoring that seeds vary as plants vary,
That this variety is as
Real and durable as the hardest stone,
Spread over the whole of nature,
Passing from plants to animals and back,
Circulating incessantly
To the animation of all that lives,¹⁹⁰

Like water circulating in constant
Motion from the depths of the sea
To the highest mountains, like blood and life
Passing between the heart and limbs,
Like a trader's circulating capital,
Continually returning
To him as money, then going from him
As goods, then returning again
In the varied currency of exchange.¹⁹¹

And, moreover, is there not the quality
Of this same awful sacredness
In the relation between a mother
And her child, the cause of all Eve's
Daughters, mothers that are, or hope to be?
Deep in the dismal regions void
Of light, three daughters at a birth were born
To Night, brooding on their care, indued
With windy wings, and crowned with hissing hair.¹⁹²

¹⁸⁵Browne; *Garden*.

¹⁸⁶Darwin, Charles; *Origin of Species*.

¹⁸⁷Douglass, Frederick; *Narrative of the Life of Frederick Douglass*.

¹⁸⁸Cowper.

¹⁸⁹Darwin, Erasmus; *Botanic Garden*.

¹⁹⁰da Vinci. Butler; *Evolution*.

¹⁹¹da Vinci. Smith, Adam.

¹⁹²Hawthorne; *Scarlet Letter*. Carlyle; *The French Revolution*. Virgil; *Aeneid*.

GENERATION 10

**For trees thickly planted, do runne up in height and branch
with no expansion, shooting unequally or short, and thinne
upon the neighbouring side.**¹⁹³

The girls and young men sat together in groups under the pine
trees upon the surrounding heights.¹⁹⁴

And all the trees are all the yeere so fruitfull, as if they were
planted in orchards: and the woods were verie thinne.¹⁹⁵

Upon the branches of the trees moss grows, forming a level
green top to the round bough like a narrow cushion along it,
with frayed edges drooping over each side.¹⁹⁶

Last night four beaver were caught in the traps; a porcupine
was shot as it was upon a cottontree, feeding on its leaves and
branches.¹⁹⁷

¹⁹³Browne; *Garden*.

¹⁹⁴Parkman; *Oregon Trail*.

¹⁹⁵Hakluyt, Richard; *The Principal Navigations*.

¹⁹⁶Jefferies.

¹⁹⁷Clark, William; Lewis, Meriwether; Jefferson, Thomas; Allen,
Paul; *History of the Expedition under the Command of Captains
Lewis and Clark, Vol. I*.

The wind bent the young trees down, exposing
The pale underside of their leaves,
And gust after gust followed, their branches
Thrashing violently in swift
Waves of alternating green and white, like
Waves on a wind-tossed field of oats.
And the winds were singing in wild accord,
Playing on each rock and tree, roaring
In a thousand shrieking and drumming swirls.¹⁹⁸

All round were venerable trees, uprooted
By the gusting wind, and fragments
Of the hills, scoured bare by the torrent,
Gravel and rock borne by the torrent
Down to choke the river and flood the valley;
A figure dressed with quaking trees
And falling rocks and overflowing streams,
A figure of abiding flux,
A figure and testifier to the law.¹⁹⁹

Men believe that the world swarms with spirits,
That spirits groan in the wind-shaken
Trees and the howling wind. I heard the trees
Moan like a man in his affliction,
And heard the wind playing its old music
Among the trees, but I never knew
More than the pleasure of him who juggles
Pebbles of flint, agate, and rough
Jasper in a flooded river bottom.²⁰⁰

¹⁹⁸Twain, Mark; *Life on the Mississippi*. Muir, John.

¹⁹⁹da Vinci. Baudelaire, Charles; Squire, John Collings, Sir; *The
Three Hills, and Other Poems*.

²⁰⁰Mackenzie. Cooper. Parkman; *Oregon Trail*.

GENERATION 11

**Nor is this strange unto such as observe the natural lines of
Trees, and parts disposed in them.**²⁰¹

Themselves then they displayed in five times seven Vowels and
consonants; and I observed The parts as they seemed spoken
unto me.²⁰²

Being for mine own part content only to set downe such notes
belonging unto these which have observed in other Writers.²⁰³

We go to strange lands and observe; we do not live there.²⁰⁴

Willingly therefore, and wholly surrender up thyself unto that
fatal concatenation, yielding up thyself unto the fates, to be
disposed of at their pleasure.²⁰⁵

²⁰¹Browne; *Garden*.

²⁰²Dante.

²⁰³Wilkins.

²⁰⁴Tagore; *Creative Unity*.

²⁰⁵Marcus Aurelius.

He, the patron of gold and silversmiths,
Juggled lapis-lazuli, rock-
Crystal, cornelian, amethyst, agate,
Chalcedony, onyx, jasper,
Quartz, serpentine, sienite, oriental
Alabaster, and green felspar;
His hands, the divider of precious stones
All in their natural colors,
One of red jasper, webbed with lines of green;²⁰⁶

One of green jasper, flecked with crimson
Sparks as small as the spark of life,
Arranging the stones with deft workmanship,
Representing trees, and all sorts
Of plants, with the shadows cast by their branches
And the leaves that hung down from them;
But not arranged in garlands or patterns,
Or in any formal order;
But with his trees rising out of the stones,²⁰⁷

As if they were rooted in them, springing
From the ground then tumbling down,
As if their native soil were precious stones,
And stones and trees were both servants
Of his intention, where was nothing mis-
Shapen, but the chaos; wherein,
To speak strictly, there was no deformity,
Because no form, it being not
Yet warmed in the juggler's shaping hands.²⁰⁸

²⁰⁶Jastrow. Layard. Rabelais.

²⁰⁷Rabelais. Layard. Ruskin, John; *The Poetry of Architecture*.

²⁰⁸Ruskin; *Poetry of Architecture*. Browne; *Religio medici*.

GENERATION 12

**Whether in this order and one Tree in some measure
breaking the cold, and pinching gusts of windes from the
other, trees will not better maintain their inward circles,
and either escape or moderate their excentricities, may also
be considered.**²⁰⁹

“Reflect, also,” said she, “whether the same conclusion is not
further confirmed by considering that there cannot be two
supreme goods distinct one from the other.”²¹⁰

Break, break, break,
On thy cold gray stones, O Sea!²¹¹

So that it makes no difference whether you approve of
moderate perturbations of mind, or of moderate injustice,
moderate cowardice, and moderate intemperance.²¹²

The circle broke its order, and screams of delight mingled with
the bustle and tumult of preparation.²¹³

²⁰⁹Browne; *Garden*.

²¹⁰Boethius.

²¹¹Tennyson, Alfred Tennyson, Baron; Schell, Frederic B.; *Beauties
of Tennyson*.

²¹²Cicero.

²¹³Cooper.

He tries to concentrate his attention
On his netting work, on the meshes
He forms, and to see only the silver
Beads and silk threads in his lap, though
He inevitably recalls the moment
When he last saw the world, after
He had last rendered it like a palmer's
Fly, its body from a mallard's
Feather, or from the neck of a capon ²¹⁴

Or a cock, bound with silk or gold or silver;
Or like a mayfly, its body
With greenish-colored crewel, or willowish
Colored; darkened in most places
With waxed silk; or silver-ribbed; and such wings,
For the color, as the fly may
Sometimes have in one season or even
On one day, a day to strip acorns
From oaks, and berries from the bay, olives, ²¹⁵

And bleeding myrtles, and to set snares for
The crane, and meshes for the stag,
And hunt the long-eared hares, and pierce the doe
With whirl of hempen-thonged balearic
Sling, when snow lies deep, and streams are drifting
Ice; a day to ask, “What planet-
Crowned dusk that wanders the steeps of our
Firmament there has gems that may
Match the jewels meshed in his handiwork?” ²¹⁶

²¹⁴Bronte, Charlotte. Barker, Thomas, fl. 1651; *The Art of Angling*.

²¹⁵Barker. Walton. Virgil; *Georgics*.

²¹⁶Virgil; *Georgics*. Marquis, Don; *Dreams and Dust*.

GENERATION 13

But standing Vegetables, void of motive-Articulations, are not without many motions.²¹⁷

Motion can neither be, nor be conceived, without space; and yet motion is not space, nor space motion; space can exist without it, and they are very distinct ideas; and so, I think, are those of space and solidity.²¹⁸

I am up, and I seem to stand, and I go round, and I am a new argument of the new philosophy, that the earth moves round; why may I not believe that the whole earth moves, in a round motion, though that seem to me to stand, when as I seem to stand to my company, and yet am carried in a giddy and circular motion as I stand?²¹⁹

And many besides wander the mighty void—
Cast back from unions of existing things,
Nowhere accepted in the universe,
And nowise linked in motions to the rest.²²⁰

Ile make the motion: stand heere, make a good shew on't, this shall end without the perdition of soules, marry Ile ride your horse as well as I ride you.²²¹

²¹⁷Browne; *Garden*.

²¹⁸Locke; *Human Understanding*.

²¹⁹Donne.

²²⁰Lucretius.

²²¹Shakespeare, William; *Twelfth Night*.

Although the variety of motion
Decreases always, it always
Is conserved through active means and causes:
The sun warms all things by its light,
The inward parts of the earth burn hot, mountains
Take fire, and the heart beats on,
Active like Prometheus, who having formed
Men of clay, brought them to life with
Fire, stolen fire, but fire still.²²²

As when coal is put into an engine,
The energy of the coal changes
Into the power of steam, and again
Changes into the mechanical
Motion of the engine. For, if the earth
And sun are animals, they are
Alive, and will breathe forth steam and motion
Until their energies are exhausted.
Earth then will not become water, water²²³

Will not be changed into air, of air will
Be made no fire, and fire
Will afford no heat unto the earth; the
Earth will produce nothing but nothing;
No rain will descend upon it, nor light
Shine thereon; no wind will blow there,
Nor will there be in it any summer
Or harvest. They return back again,
Till order be unravelled, motion stilled.²²⁴

²²²Newton; *Optics*. Ovid; Riley, Henry T.; *The Metamorphoses of Ovid I-VII*.

²²³Hooper. Ovid; Riley, Henry T.; *The Metamorphoses of Ovid VIII-XV*. Rabelais.

²²⁴Rabelais. Ovid.

GENERATION 14

**More considerable there are in this mysticall account,
which we must not insist on.**²²⁵

By this account, madam, you have but two thousand pounds fortune, and not a shilling more—and you insist upon having three hundred pounds a year jointure for it.²²⁶

Now I must insist on this matter, for a grave reason.²²⁷

They rebelliously insist that they must no longer learn, but rather pass examinations.²²⁸

Those strange and mysticall transmigrations that I have observed in Silkwormes, turn'd my Philosophy into Divinity.²²⁹

²²⁵Browne; *Garden*.

²²⁶Sterne.

²²⁷Ruskin; *Queen of the Air*.

²²⁸Tagore; *Creative Unity*.

²²⁹Bodemer, Charles W.; King, Lester S.; *Medical Investigation in Seventeenth Century England*.

What is descent but the reproduction
By organised matter of
Processes recalled in its generation,
A kind of history in which
The parent is itself an accomplice?
Do not fires, fevers, sown seeds,
Chemical mixtures, men, events, all bodies
Of force go on growing, through phases,
Each according to its kind; reach their height,²³⁰

Then their visible decline; finally
Sink under, vanishing, and die;
Each a history, like bullets cast from
The same mold, or books printed from
The same type? We should make this our exact
Study, and for sea and river
We should know all the fishes, for the air
All the birds, for the earth all shrubs
And trees and all herbs and flowers that grow,²³¹

And from earth all metals and gem stones,
Though the sight and touch often take
In from the same object at the same time
Different ideas; the eyes
See motion and color; the hand feels softness
And warmth in the same piece of wax:
Yet the simple ideas thus united
In the same subject are as distinct
As those that come in by different senses.²³²

²³⁰Butler; *Unconscious Memory*. Carlyle; *The French Revolution*.

²³¹Carlyle; *The French Revolution*. Maxwell, James Clerk; *Five of Maxwell's Papers*. Rabelais.

²³²Rabelais. Locke; *Human Understanding*.

GENERATION 15

The Summer-worm of Ponds and splashes makes a long waving motion; the hair-worm seldome lies still.²³³

O for the sunshine and motion of waves in a song!²³⁴

As in nature all is ebb and tide, all is wave motion, so it seems that; in all branches of industry alternating currents—electric wave motion—will have the sway.²³⁵

Silent flows the parent stream,
And if rocks do lie below,
Smothers with her waves the din,
As it were a youthful sin,
Just as still, and just as slow.²³⁶

. . . to go
Over the long, long waves, or pick
The flowers in blow?²³⁷

²³³Browne; *Garden*.

²³⁴Whitman.

²³⁵Tesla, Nikola; *Experiments with Alternate Currents of High Potential and High Frequency*.

²³⁶Thoreau.

²³⁷Horace.

And so it is, that over these pastures,
Prairies and potter's fields, the waves
Should rise and fall, and always ebb and flow;
For here, dreams and reveries, all
We call lives and souls, lie dreaming and rise
Dreaming still, tossing like sleepers,
The ever-rolling wave stirred by their tossing.
An acorn grows in the dead leaves,
The cast-off foliage of a constant motion;²³⁸

The ceaseless rolling of the ocean waves,
The swaying of the trees, the bending
Of the flowers, the waving of the corn,
The motion of terrestrial
Objects, as in spring time, when the lowlands
And coast ranges are fairly drenched
With sunshine, the sky echoes the songs of
Meadowlarks, and the hills are so
Covered with flowers that they seemed painted.²³⁹

Shall I my mother and daughter behold,
Then sing to the throne of heaven?
The tempest rushes on, wave after wave,
The waves move onward, but the water
Rising and falling does not, waves like birds
Calling beneath the spray and spume,
The crash of the waves, the roar of the wind:
The flood is raised up high, O LORD;
It rises and sings its multiple songs.²⁴⁰

²³⁸Melville. Churchill.

²³⁹Hampson, P.; *The Romance of Mathematics*. Muir, John.

²⁴⁰Virgil; *Aeneid*. Gray, Thomas; Carruthers, Robert; Rolfe, W. J.; *Select Poems of Thomas Gray*. Ewald, Carl; Reynolds, Warwick; Teixeira de Mattos, Alexander; *The Pond*. Emerson; *Essays*. Ovid. *Psalms*.

RETICULATION

RETICULATION 1

Since the verdant state of things is the Symbole of the Resurrection, and to flourish in the state of Glory, we must first be sown in corruption.²⁴¹

The emblem of Death was quite early crowned with laurel to signify glory, and associated with foliage and flowers in token of the Resurrection.²⁴²

To the Corinthians he wrote: "If we have sown unto you spiritual things is it a great thing if we shall reap your carnal things?"²⁴³

Who fain would sow the fallow field,
And see the growing corn,
Must first remove the useless weeds,
The bramble and the thorn.²⁴⁴

Enough: corruption was the world's first woe.²⁴⁵

²⁴¹Browne; *Garden*.

²⁴²Vincent.

²⁴³Luther, Martin; Graebner, Theodore; *Commentary on the Epistle to the Galatians*.

²⁴⁴Boethius.

²⁴⁵Hopkins.

Water has eroded the soft sandstone
Into countless ornate figures,
Elegant ranges of freestone buildings,
With columns and galleries, and
Parapets adorned with statuary,
Like a frieze from some Parthenon:
The water speaks for Athena. Throw your
Window open in the morning,
And in the water hear the goddess speak.²⁴⁶

The ruins of this city's high buildings
Raise a great dust, rising up like
Smoke, or like clouds before the falling rain.
Swollen water will flood the scene,
Striking in eddying whirlpools against rock
And stone, leaping into the air
As muddy foam, and falling, eroding
Sandstone shaped and reshaped into
A testament of the order of change,²⁴⁷

Whence ascending and descending to heaven,
Out of the water and back again,
Are like rising and falling in honor,
The rising up in dignity,
Or falling to an unhappy estate;
Like a faint voice heard through the dust,
Speaking of the fall of kingdoms, earthquakes,
The shaking of heaven and earth,
And the decay of order and its regrowth.²⁴⁸

²⁴⁶Clark. Ruskin; *Queen of the Air*.

²⁴⁷da Vinci.

²⁴⁸Newton, Isaac, Sir; *Observations upon the Prophecies of Daniel, and the Apocalypse of St. John*.

RETICULATION 2

But the Earth is the Garden of Nature, and each fruitful Country a Paradise.²⁴⁹

In Milton's *Paradise Lost*, the very subject—Man dwelling in the garden of Paradise—seems to afford a special opportunity for bringing out the true greatness of man's relationship with Nature.²⁵⁰

The rock garden's one and only creed is nature.²⁵¹

It was a hill,
Of Paradise the highest; from whose top
The hemisphere of earth, in clearest ken,
Stretched out to the amplest reach of prospect lay.²⁵²

For what has made the sage or poet write
But the fair paradise of Nature's light?²⁵³

²⁴⁹Browne; *Garden*.

²⁵⁰Tagore; *Creative Unity*.

²⁵¹Adams.

²⁵²Milton.

²⁵³Keats, John; *Poems 1817*.

And your writing desk with its blank paper
And all its other implements
Will appear as a loose chain of paper
Flowers, capable of linking
Your thoughts and feelings to times and places
Past and future; not a chain of
Iron, which binds you to the tangible
Now, the ever present present,
But to remembered and imagined events,²⁵⁴

Like paper roses twisted in a chain
Against a background of green leaves,
The pink and white petals of June roses
Folded around the leaves, folded
Fast, well joined and knit, a soft but surely
Holding chain; or like the wild form
Of a bird's wings, or a cloud's swift flight, unwearied,
Rippling through the clear heaven,
Interpreting all intense passion through²⁵⁵

The soft spring nights, bursting into acclaim
And rapture of choir at daybreak,
Or sighing among the boughs and hedges
Through heat of day, like little winds
That make the cowslip bells shake, and ruffle
The petals of the wild rosebush.
The chain still holds, although the paper links
Grow brittle; the pattern repeats,
Like the morning light, like the evening gloom.²⁵⁶

²⁵⁴Coleridge; *Biographia Literaria*.

²⁵⁵Sinclair, Upton; *The Jungle*. Jefferies. Tasso, Torquato; Fairfax, Edward; *Jerusalem Delivered*. Ruskin; *Queen of the Air*.

²⁵⁶Ruskin; *Queen of the Air*. Chaucer, Geoffrey; Dryden, John; *Dryden's Palamon and Arcite*.

RETICULATION 3

Quincuncial forms and ordinations are also observable in animal figurations.²⁵⁷

The ideas also remain, but they have become types in nature, forms of men, animals, birds, fishes.²⁵⁸

This animal was a form of Ares (Mars), god of war and tempest, who also loved Aphrodite (Ishtar).²⁵⁹

Plants and animals are living forms of faith, or faiths of form, whichever the reader pleases.²⁶⁰

O mine animals, are ye also cruel?²⁶¹

So old, so very, very old, older
Than the first Chinese empire,
Or the first double-crowned Pharaoh, older
Even than the walls of Jerico;
Back in those dim Sanskrit times that seem like
Clouds on the far horizon beyond,
Where space and chaos began to take shape,
Though but of vapour. A thousand
Miles of cloud pass silently overhead ²⁶²

In immense packs, a mile square side by side,
In parallel book-shapes, turning
Over as they approach. Its name it shifts
From form to form, it drifts and darkens.
Perhaps you handle a compass, and map
The watercourses and mountains
Of the wilderness, so they who follow
May find them by their given names.
Once, a draughtsman employed in a public ²⁶³

Survey found that he could not map the land
Until its geological
Structure was known to him, its densities,
Growth, facades, soils, rocks, fossil trees;
How the finer beds of clay were arranged
In thicker or thinner layers;
How the beds of pebbles were all rounded
Smooth, just like any worn pebble
From any watercourse, so very worn. ²⁶⁴

²⁵⁷Browne; *Garden*.

²⁵⁸Plato; Jowett, Benjamin; *Timaeus*.

²⁵⁹Mackenzie.

²⁶⁰Butler; *Evolution*.

²⁶¹Nietzsche; *Zarathustra*.

²⁶²Jefferies.

²⁶³Jefferies. Marquis. Cooper. Emerson; *Essays*.

²⁶⁴Emerson; *Essays*. Whitman. Nicholson, Henry Alleyne; *The Ancient Life History of the Earth*.

RETICULATION 4

Owing this name not only unto the Quintuple number of Trees, but the figure declaring that number, which being doubled at the angle, makes up the Letter X, that is the Emphatical decussation, or fundamental figure.²⁶⁵

And this arc AF is the measure of the angle ACF in the figure of the crystal.²⁶⁶

Each of the four solid angles in this figure is a little larger than the largest of obtuse angles.²⁶⁷

Of this so luculent and precious jewel,
Which of our heaven is nearest unto me,
Great fame remained; and ere it die away
This hundredth year shall yet quintupled be.²⁶⁸

Unto thee, O God, do we give thanks, unto thee do we give
thanks: for that thy name is near thy wondrous works
declare.²⁶⁹

²⁶⁵Browne; *Garden*.

²⁶⁶Huygens, Christiaan; Thompson, Silvanus P.; *Treatise on Light*.

²⁶⁷Plato; *Timaeus*.

²⁶⁸Dante.

²⁶⁹*Psalms*.

I quickly pass from persons to ideas
To numbers, and from ideas
And numbers back to persons, from heaven
To man and back; I confuse subject
And object, first and final cause, and dream
Of geometrical figures
Lost in a flux of sense, my theme wandering
Like reindeer along a frozen
Shore wandering; a scanty correlative²⁷⁰

Growth of moss between drifts of sunlit snow;
Low rafts of leafless willow dark
And clammy; patches of bare earth oozing
And black on sunny southern slopes;
Elsewhere the ground crusted with snow, frozen
And thawed at midnight and at noon.
Long snow-streamers drape the walls of a cirque,
Like a gauzy, wind-woven robe
On a survivor of the *Titanomachia*,²⁷¹

As cold as steel in the polar spring sun.
Why are this whiteness and coldness
In the crusted snow and the melting ice?
Are the one and the other thought
But the product of the figure and motion
And number of its phase changes?
A shallow wonder perhaps, or perhaps
The secret to some thaumaturgy,
Ermined with snowdrifts and robed in clouds.²⁷²

²⁷⁰Plato; *Timaeus*. Allen.

²⁷¹Allen. Parkman; *Montcalm*. Muir, John.

²⁷²Muir, John. Locke; *Human Understanding*. Lowell.

RETICULATION 5

That the first Plantations not long after the Flood were disposed after this manner, the generality and antiquity of this order observed in Vineyards, and Wine Plantations, affordeth some conjecture.²⁷³

Next fifty handmaids in long order bore
The censers, and with fumes the gods adore:
Then youths, and virgins twice as many, join
To place the dishes, and to serve the wine.²⁷⁴

The pretence of this order was the scarcity of corn and pasture,
and the superabundance of wine.²⁷⁵

The thistle is the order for dignity and antiquity; the veritable
'nemo me impune lacessit' of chivalry.²⁷⁶

But slaves we are, and labour on another man's plantation; we
dress the vineyard, but the wine is the owner's.²⁷⁷

²⁷³Browne; *Garden*.

²⁷⁴Virgil; *Aeneid*.

²⁷⁵Smith, Adam.

²⁷⁶Cooper.

²⁷⁷Dryden; *Discourses*.

I want the meaning and understanding
Of the wild flowers in the meadow
Next to wood where the fairies dance the night
Away within a luminous
Ring of mushrooms in the dappled moonlight.
All round the outer circle are
Magic symbols, and within these again
An inner circle holds the signs
Of planets, and a path for dancers' feet.²⁷⁸

They say there are trees of a wonderful
Size and height, set in porticoes
And colonnades, and cut and pruned so
That as they grow they interlace
And form the groundwork and floor of a temple,
And rise to form its walls, and bend
In arches to form its roof. Along its
Terraces are orange and lemon
Trees, with myrtles, sweet bay, and aloes mixed,²⁷⁹

And always with cypresses in dark spires,
The long shadows of the cypresses,
The golden leaves of the glancing aloes:
Figures like pale statues in their
Everlasting death in life, marble forms
Of more than mortal grace lightening
Along the green arcades, amidst dark cool
Grottoes, full of the voice of dashing
Waters, and of the breath of myrtle blossoms.²⁸⁰

²⁷⁸Jefferies. Baudelaire. Arnold.

²⁷⁹Swedenborg. Ruskin; *Poetry of Architecture*.

²⁸⁰Ruskin; *Poetry of Architecture*.

RETICULATION 6

That is, the rows and orders so handsomely disposed; or five trees so set together, that a regular angularity, and through prospect, was left on every side.²⁸¹

Together with a due contemplation of the fruit-trees, the grapevines, the buttonwood-tree, the cat, the birds, and many other particulars, I failed not to study the row of fashionable dwellings to which all these appertained.²⁸²

Lamps gracefully disposed, and of all hues,
Illumined every side.²⁸³

The trees made an admirable fence to the landscape, skirting the horizon on every side.²⁸⁴

Every verse is as flat, thin, and regular as a lath, and their poems are nothing more than bundles of such tied trimly together.²⁸⁵

²⁸¹Browne; *Garden*.

²⁸²Hawthorne; *Bliethedale Romance*.

²⁸³Cowper.

²⁸⁴Thoreau.

²⁸⁵Lowell.

Physical conception is found alone
In the harmony of order
Inseparably associated
With the varied forms of matter
Graduated from atoms to elements,
To meteorites, satellites,
Planets, suns and stars, and oceans of stars,
All formed by the coalescence
Of atoms unchangeable, indestructible,²⁸⁶

And impenetrable. In a burning
Candle, the impact of oxygen
Atoms against the carbon and hydrogen
Atoms in the wax or tallow
Produces the light and heat of the flame,
Atoms like the waves of the sea
Which break into foam on the shore, then rush
Back to the sea from whence they came.
Vain it would be to tell all the figures²⁸⁷

Circling in their juxtapositions,
Revolving back upon themselves,
Eclipsed from our sight then visible
Again; a tale of terrors and
Intimations of the future to those
Who can articulate their movements:
See the sun darken in the predicted
Quarter of the sky, and connect
It to the motion of your understanding.²⁸⁸

²⁸⁶Hooper. Muir, M. M. Pattison; *The Story of Alchemy and the Beginnings of Chemistry*.

²⁸⁷Muir, M.M. Allen. da Vinci. Plato; *Timaeus*.

²⁸⁸Plato; *Timaeus*. Brewster, David, Sir; *The Martyrs of Science, or, The lives of Galileo, Tycho Brahe, and Kepler*.

RETICULATION 7

Nor was this only a form of practise in Plantations, but found imitation from high Antiquity, in sundry artificial contrivances and manual operations.²⁸⁹

Then again, Pythagoras showed that a right angle can be formed without the contrivances of the artisan.²⁹⁰

It began one day when he picked up a manual that someone had discarded, a manual for an obscure form of computer language for doing calculations.²⁹¹

The art of imitation by wax does not usually afford the multitude of copies which flow from many similar operations.²⁹²

An imitation, more imitation, imitation succeed imitations.²⁹³

Guilloche was first intended to prevent
The forgery of currency,
And two principles specially adapt
It to that end: the impressions
Are all identical, so that the smallest
Deviation can be detected;
The expense, even of the most complex
Engraving, is trifling, compared
With the number of copies made from it. ²⁹⁴

We must, however, see that the idea
Of copying itself furnishes
An expedient for counterfeiting
Any engraving, however
Complicated; although the perfection
Of the copy is a hedge against
Forgery, the copy also suggests
Its eventual forgery
Simply by being itself a copy. ²⁹⁵

Here we have an obvious inducement
To forgery: what god shall Echo's
Voice repeat in Helicon's sequestered
Shade, where once the silent woods obeyed
The minstrel's will, who taught the listening
Trees to speak for the murmuring
Stream and the whispering breeze? For still their
Still lips and their still breath survive,
Their voices dimimishing amidst the trees. ²⁹⁶

²⁸⁹Browne; *Garden*.

²⁹⁰Vitruvius.

²⁹¹Levy, Steven; *Hackers, Heroes of the Computer Revolution*.

²⁹²Babbage.

²⁹³Stein.

²⁹⁴Babbage.

²⁹⁵Babbage.

²⁹⁶Sunzi. Horace. Bion et al.

RETICULATION 8

We shall not call in the Hebrew *Tenapha*, or ceremony of their Oblations, waved by the priest unto the four quarters of the world, after the form of a cross; as in the peace-offerings.²⁹⁷

I have a kinsman not past three quarters of a mile hence, unto whom I was going; I shall there have money or anything I want.²⁹⁸

So shall your truth unto the world be known,
And I resolved where now I am afraid.²⁹⁹

His praise, ye Winds, that from four quarters blow,
Breathe soft or loud; and, wave your tops, ye Pines,
With every plant, in sign of worship wave.³⁰⁰

God made this marriage in paradise, and called the whole world unto it, saying, *Semen mulieris conteret caput serpentis*; “The Seed of the woman shall vanquish the head of the serpent.”³⁰¹

Soon he awakened to a melody
He imagined, the last echo
From a dream of his own music, the quiet
Timbre of his oboe, a voice
Drawing sweetness from the quiet lakeshore
He dreamed beside, content to dream.
Such was the measure and law of all things
Rescued from chaos and confusion
By the power of these notes of music,³⁰²

A present witness to what would have become
Of him were he of their measure
And pattern deprived. He heard the echo
Of rhythm and harmonious
Motion everywhere; not imaginary
Nor fanciful nor superfluous,
But a real connection which existed
Between number and harmony,
Between the lakeshore and the melody,³⁰³

For with the touch of recollected music,
He grew conscious of the inward
Resonance of new chords of thought, the strange
Music of dreams dawning to all
This world's combustion of sound and sunlight.
To the east, backlit by the sun,
A cloud of smoke rises above the trees,
And the distant sound of alarms
And sirens carried by the morning breeze.³⁰⁴

²⁹⁷Browne; *Garden*.

²⁹⁸Shakespeare, William; *The Winter's Tale*.

²⁹⁹Fletcher et al.

³⁰⁰Milton.

³⁰¹Latimer.

³⁰²Grey, Zane. Radcliffe. Plato; *Timaeus*.

³⁰³Plato; *Timaeus*.

³⁰⁴Grey, Zane. Thoreau.

RETICULATION 9

And since even in Paradise it self, the tree of knowledge was placed in the middle of the Garden, whatever was the ambient figure; there wanted not a centre and rule of decussation.³⁰⁵

Was it for her that you wanted to make your valley a paradise?³⁰⁶

A centre can place and four are no more and two and two are not middle.³⁰⁷

And out of the ground made the LORD God to grow every tree that is pleasant to the sight, and good for food; the tree of life also in the midst of the garden, and the tree of knowledge of good and evil.³⁰⁸

O sovran, virtuous, precious of all trees
In Paradise!³⁰⁹

³⁰⁵Browne; *Garden*.

³⁰⁶Grey, Zane.

³⁰⁷Stein.

³⁰⁸*Genesis*.

³⁰⁹Milton.

Zoroaster erected fire temples
Wherever he went, teaching that
Fire is the true Shekinah glory,
The throne of god a bright flame, great
And bright like the sun. Marvel at the sight:
Around a fire a circle
Of light quivers, embraced by the darkness;
A finger of flame touches dry
Twigs; the fire flares up, then dies away: ³¹⁰

Darkness and light struggle, twined together
Like lovers. As when a glowing
Coal is waved in a circle, the whole motion
Appears like one circle of fire,
So, of the heavenly and divine, he
Found their greater part in fire,
Since the gods are the brightest and fairest,
And the likeness of the universe
To them forms the figure of a circle. ³¹¹

The general appearances of nature,
The circle of the universe,
Is the true cosmos, the glorious world
Spangled with fire and light all
Over. Sometimes, when the fire burnt low,
Out of the darkness a horse, a
Bay with a white forelock, thrust its head
Into the narrowing circle,
Its blank, empty eyes glittering with fire. ³¹²

³¹⁰Anon; *Fishes, Flowers, and Fire*. Turgenev, Ivan Sergeevich; Garnett, Constance; *A Sportsman's Sketches*.

³¹¹Turgenev. Newton; *Optics*. Plato; *Timaeus*.

³¹²Plato; *Timaeus*. Turgenev.

RETICULATION 10

Now the number of five is remarkable in every Circle, not only as the first sphaerical Number, but the measure of sphaerical motion.³¹³

Now the motion of the outer circle he called the motion of the same, and the motion of the inner circle the motion of the other or diverse.³¹⁴

I measure the motion of a body in time; and the time itself do I not measure?³¹⁵

The Diameters of the first and third I had not time to measure, but that of the first seemed to be about five or six Degrees, and that of the third about twelve.³¹⁶

Number measures all Measurables.³¹⁷

The eye is the first circle, the horizon
Is the second, and all nature
Repeats this single figure without end,
As in Greek, where *kuklos* signifies
A circle, and *ops*, an eye: all of us
Are walking through a Clyclopean
Landscape, the world but one circular eye.
Stand in the dark and press the corner
Of one eye, and then turn the eye away;³¹⁸

You will see a circle of colors like
The feathers of a peacock's tail,
The distorted intersections between
The pupil and the crystalline
Lens, the numbers and figures of vision
Visible to the eye of sense;
The truth of nature and mathematics
Pressed out-of-round and appearing
As green and purple amidst the darkness.³¹⁹

The eye has its vectors and quaternions,
Its magnitudes and directions
In space and time, its infinitesimal
Calculus waiting for its Newton
Or its Leibnitz. One afternoon, as I
Was sitting with my slate puzzling
Over a sum, I caught sight of a figure
Just passing: I recognised
Almost instinctively its gaunt outline.³²⁰

³¹³Browne; *Garden*.

³¹⁴Plato; *Timaeus*.

³¹⁵Augustine.

³¹⁶Newton; *Optics*.

³¹⁷Locke; *Human Understanding*.

³¹⁸Emerson; *Essays*. Ovid. Newton; *Optics*.

³¹⁹Newton; *Optics*. da Vinci. Plato; *Timaeus*.

³²⁰Maxwell. International Meridian Conference (1884 : Washington, D.C.); *International Conference Held at Washington for the Purpose of Fixing a Prime Meridian and a Universal Day. October, 1884. Protocols of the Proceedings*. Bronte, Charlotte.

RETICULATION 11

And for the stability of this Number, he shall not want the sphericity of its nature, which multiplied in it self, will return into its own denomination, and bring up the reare of the account.³²¹

This nature doth so multiply itself
In numbers, that there never yet was speech
Nor mortal fancy that can go so far.³²²

And the angel of the LORD said unto her, I will multiply thy seed exceedingly, that it shall not be numbered for multitude.³²³

Thy sorrow I will greatly multiply
By thy conception; children thou shalt bring
In sorrow forth; and to thy husband's will
Thine shall submit; he over thee shall rule.³²⁴

Thus the number of copies producible from the same design may be multiplied a thousand-fold.³²⁵

³²¹Browne; *Garden*.

³²²Dante.

³²³*Genesis*.

³²⁴Milton.

³²⁵Babbage.

And so it haps that they who trust in books,
Do as they cast up little sums
Into a greater, without first asking
Whether those sums were rightly cast,
At last finding the error visible,
And not mistrusting their first sums,
Fall into a fluttering confusion,
Like birds, which enter by a chimney,
And find themselves enclosed in a chamber,³²⁶

Flutter at the false light of a glass window,
Or like a bird, caught in a fowler's
Snare, beats its wings, and, fluttering, tightens
The noose: thus speaks the confusion.
Then, however, it happened suddenly
That he checked his sums, and saw that
He was flocked around and fluttered around,
As if by innumerable
Birds, by the rustle of so many wings,³²⁷

By birds which change with the changing weather
Their own raucous songs, like long-lived
Generations of crows or flocks of rooks,
When they be said to cry for rain
And water and to call at times for gales,
With all and the yield of all, fusing
And holding, claiming and devouring
The whole, no labial persuasive
Sound, but a croaking like crows in the wind.³²⁸

³²⁶Hobbes.

³²⁷Hobbes. Ovid. Nietzsche; *Zarathustra*.

³²⁸Lucretius. Whitman.

RETICULATION 12

The circle declaring the motion of the indivisible soul, simple, according to the divinity of its nature, and returning into it self; the right lines respecting the motion pertaining unto sense, and vegetation, and the central decussation, the wondrous connexion of the severall faculties conjointly in one substance.³²⁹

He says the soul unto its star returns,
Believing it to have been severed thence
Whenever nature gave it as a form.³³⁰

Man, before he hath his immortal soul, hath a soul of sense,
and a soul of vegetation before that: this immortal soul did not
forbid other souls to be in us before, but when this soul departs,
it carries all with it; no more vegetation, no more sense.³³¹

For one thing is consequent unto another, by local motion, by
natural conspiration and agreement, and by substantial union,
or, reduction of all substances into one.³³²

This first and most simple construction in space is the point in
motion, or the line.³³³

³²⁹Browne; *Garden*.

³³⁰Dante.

³³¹Donne.

³³²Marcus Aurelius.

³³³Coleridge; *Biographia Literaria*.

Since I wandered between the pole and hinges
Heavenly, among encentricals,
Centers, concentrics, circles, and epicycles,
And found them full of life and wisdom,
I have turned my attention to the applied
Mathematics, in order to
Determine what other truths it may yield.
This pulse, this motive of the stars,
Suns, systems, that, circling, move in order,³³⁴

Safe, harmonious, athwart the shapeless
Vastnesses of space: how should I
Think, how breathe, how speak? For the external
Elements which surround us cause
Us to consume away, and distribute
Like to like, particles of blood
Contained within our frame as in a
Sort of heaven, and compelled to
Imitate the motion of the universe.³³⁵

Clouds come up no wider than a pasture,
Stretching out to the horizon,
Dividing the blue sky from the blue sky,
Fleets of heaven that know no harbor.
Some sweep the ground and with writhing belly
Trace in the dust a sinuous groove;
Some through heaven's ample spaces in free
Motion smoothly glide, ranging over
The verdant meadows, over the woodland groves.³³⁶

³³⁴Hampson. Whitman.

³³⁵Whitman. Plato; *Timaeus*.

³³⁶Jefferies. Boethius.

RETICULATION 13

And so conjoined the unity and duality of the soul, and made out the three substances so much considered by him; That is, the indivisible or divine, the divisible or corporeal, and that third, which was the *Systasis* or harmony of those two, in the mystical decussation.³³⁷

The three Divine are in this hierarchy,
First the Dominions, and the Virtues next;
And the third order is that of the Powers.³³⁸

But there is no harmony, he said, in the two propositions that knowledge is recollection, and that the soul is a harmony.³³⁹

We have shown that the soul is indivisible, incorporeal, unextended, and it is consequently incorruptible.³⁴⁰

Now Kabir, achieving this synthesis between the personal and cosmic aspects of the Divine Nature, eludes the three great dangers which threaten mystical religion.³⁴¹

³³⁷Browne; *Garden*.

³³⁸Dante.

³³⁹Plato; Jowett, Benjamin; *Phaedo*.

³⁴⁰Berkeley, George; *A Treatise Concerning the Principles of Human Knowledge*.

³⁴¹Kabir.

So propitiate the only-begotten
Hecate, pouring out a goblet
Brim-full of the hive-stored labor of bees
Over her three heads and three bodies,
Three roots reaching down into the dark regions
Beneath the earth, holding together
The universal structure in their mighty
Clasp, down from within an open
Glade in the recesses of a grove concealed.³⁴²

See, canopied by the heavens alone,
Three altars of turf, one to Luna,
One to Diana, and one to Prosperine;
Being, generation and space,
These three, existing between the heavens,
The nurses of generation,
Moistened by water and inflamed by fire,
Taking the forms of air and earth.
In front of the altars, three men, plastered³⁴³

With bright red earth from head to foot, strutting
To and fro, the earth beginning
To bellow, trees to dance, and howling dogs
In glimmerring light advancing:
The spirits tell us they can still the waves,
And fetch all the treasure hidden
Within the earth or drowned at sea: tell me,
Thomas, what more shall these three want,
Who have the earth and sea, the sun and moon?³⁴⁴

³⁴²Apollonius, Rhodius; Seaton, R. C.; *The Argonautica*. Chaucer; *Palamon and Arcite*. Mercer. Ovid.

³⁴³Ovid. Plato; *Timaeus*. Conrad.

³⁴⁴Conrad. Virgil; *Aeneid*. Marlowe. Newton; *Observations*.

RETICULATION 14

And before it arriveth unto the same point again, it maketh five circles equall unto it self, in each progresse from those quarters, absolving an equall circle.³⁴⁵

Thus they returned along the lurid circle
On either hand unto the opposite point,
Shouting their shameful metre evermore.³⁴⁶

In everyday life our personality moves in a narrow circle of immediate self-interest.³⁴⁷

For when a Cause is heard; not to condemne, is to absolve; but on the contrary, to say that not absolving, is condemning, is not true.³⁴⁸

To conclude, I will not speak here in particular of the progresse I hoped to make hereafter in Learning; Nor engage my self by any promise to the Publick, which I am not certain to perform.³⁴⁹

How little soever he be raised, he moves,
And moves in a circle giddily;
And as in the heavens a few circles
Go about the whole world, and many
Epicycles, and other lesser circles,
So the life of man is a self-
Evolving circle, which, from a ring small
And imperceptible rushes
On in expanding circles without end.³⁵⁰

Grand go the years in the crescent above;
Worlds scoop their arcs, the firmament
Turns, diadems drop, and doges surrender,
Soundless as snowflakes. Mountains rise
From the plains, the plains extend, divided
By rivers running round; these rivers
Making way through nature's chains, with headlong
Course, into the raging sea beneath
The lofty woods, the forests wide and long,³⁵¹

Adorned with leaves and branches fresh and green,
The meadows fair with verdant grass,
The silver-scaled fish that softly swim within
The sweet brook's crystal, watery
Stream. This is no metaphor. It is a
Simple scientific fact: we
Start out from nothingness, take figure, and
Are apparitions; round us, as
Round the veriest specter, is eternity.³⁵²

³⁴⁵Browne; *Garden*.

³⁴⁶Dante.

³⁴⁷Tagore; *Creative Unity*.

³⁴⁸Hobbes.

³⁴⁹Descartes, Rene; *A Discourse of a Method for the Well Guiding of Reason and the Discovery of Truth in the Sciences*.

³⁵⁰Donne. Emerson; *Essays*.

³⁵¹Dickinson. Walton.

³⁵²Walton. Carlyle; *Sartor Resartus*.

RETICULATION 15

All things began in order, so shall they end, and so shall they begin again; according to the ordainer of order and mystical Mathematicks of the City of heaven.³⁵³

How all superbest deeds since
Time began are traceable to it—and shall be to the end!³⁵⁴

Here she ended, and dawn enthroned in gold began to show in
heaven, whereon she returned inland.³⁵⁵

Just so in the history of the great prevailing city: you begin
with a town and you end with an empire, and this by unmarked
stages?³⁵⁶

Then shall I praise that heaven for such a sun
That saved my life, whenas my grief begun.³⁵⁷

³⁵³Browne; *Garden*.

³⁵⁴Whitman.

³⁵⁵Homer; *Odyssey*.

³⁵⁶Bagehot, Walter; *Physics and Politics*.

³⁵⁷Fletcher et al.

I take in hand none but clean, fair-and-square
Mathematical jobs, something
That regularly begins at the start,
And is at the middle when midway,
And comes to an end at the conclusion;
Not a cobbler's job, that begins
At the end, and then ends in the middle.
“Are you mocking me,” you say, “weaving
A labyrinth of tangled arguments,”³⁵⁸

Or do you build up some wondrous circle
Of divinity?” But though I
Cannot see whence it began, and it continues
To move so that I see not when
It ends, I cannot measure, save by chance
From the time I began, until
I cease to see, not like the figures I
Have seen set orderly for burial,
Shaven and fitted to a frame, when clocks³⁵⁹

Are stopped and space and time stare all around.
Fire and water, air and earth,
Fate that governs all that heaven creates,
Nor art, nor nature's hand can ease
our grief. Heaven, I swear, heaven, will
Not consent herein we be beguiled,
Will leave the both of us pale, sad and wan,
A spectacle of grief and fear:
O, dreams late begun, and far too soon ended!³⁶⁰

³⁵⁸Melville. Boethius.

³⁵⁹Boethius. Augustine. Dickinson.

³⁶⁰Dickinson. Chaucer; *Palamon and Arcite*. Tasso. Abbot et al.

RECOLLECTION

RECOLLECTION 1

That *Cain* and *Abel* were the first that offered Sacrifice; or because the Scripture is silent that *Adam* or *Isaac* offered none at all.³⁶¹

Cain's envy was the more vile and malignant, towards his brother Abel, because when his sacrifice was better accepted, there was no body to look on.³⁶²

And the LORD said unto Cain, Where is Abel thy brother?³⁶³

And it was clept sometime the Vale of Mamre, and some-time it was clept the Vale of Tears, because that Adam wept there an hundred year for the death of Abel his son, that Cain slew.³⁶⁴

On the first and last day, sacrifices were offered to the dead, and the fate of Hyacinthus was lamented.³⁶⁵

This rose-bush, by a strange chance, has been kept
Alive in history; whether
It had merely survived despite the fall
Of the oaks that once sheltered it,
Or whether, as there is fair authority
For believing, it had sprung up
Under the footsteps of a sainted nun,
We cannot determine. Was she
The destined prophetess, despite being³⁶⁶

Bowed down in shame and burdened with sorrow?
Somewhere in a wood there is the
Tombstone of the prophetess, bearing weathered,
Enigmatic inscriptions telling
Of the flower of goodness, root of bliss
Everlasting, the well of life;
A fragment from a dream of human life,
Shaped by new-learned art, and framed into
These dialogues of business, love, and strife,³⁶⁷

From youth to palsied age, as if this whole
Prophecy were one looping chain
Of imitation. For my part, I hope
For quiet days and fair issue,
Such that the strongest suggestion of our
Worser genius can by no means
Touch, though even from imperfection's murkiest
Cloud, darts always forth one ray of
Perfect light, one flash of heaven's glory.³⁶⁸

³⁶¹Browne; *Garden*.

³⁶²Bacon.

³⁶³*Genesis*.

³⁶⁴Mandeville, John, Sir; *The Travels of Sir John Mandeville*.

³⁶⁵Ovid.

³⁶⁶Hawthorne; *Scarlet Letter*.

³⁶⁷Hawthorne; *Scarlet Letter*. Jefferies. Tasso. Wordsworth; *Poems*.

³⁶⁸Wordsworth; *Poems*. Shakespeare; *Tempest*. Whitman.

RECOLLECTION 2

And *Ulysses* being a boy was promised by his father forty Fig-trees, and fifty rows of vines, producing all kind of grapes.³⁶⁹

You gave me thirteen pear trees, ten apple trees, and forty fig trees; you also said you would give me fifty rows of vines; there was corn planted between each row, and they yield grapes of every kind when the heat of heaven has been laid heavy upon them."³⁷⁰

As to trees the vine
Is crown of glory, as to vines the grape,
Bulls to the herd, to fruitful fields the corn,
So the one glory of thine own art thou.³⁷¹

She promised that my boy, every morning, should be carried to the hill to catch the first glimpse of his father's sail!³⁷²

Make vines for me,
And clusters of grapes in it,
And of gold Love and Bathyllus
Treading the grapes
With the fair Lyaeus ON HIMSELF.³⁷³

³⁶⁹Browne; *Garden*.

³⁷⁰Homer; *Odyssey*.

³⁷¹Virgil; *The Eclogues*.

³⁷²Melville.

³⁷³Thoreau.

One fetches his pedigree from Aeneas,
Another from Brutus, a third
From King Arthur: they hang up their ancestors'
Worm-eaten pictures, and keep lists
Of their predecessors, with an account
Of their offices and titles,
While they are but transcripts of their forefathers'
Dumb statues, and degenerate
Even into those very beasts which they³⁷⁴

Carry in their coat of arms as ensigns
Of their nobility. They inherited,
Generation after generation,
The wondrous tales of their predecessors,
Which they in turn retailed to the public
With such additions as made them
More vendible, and so, receiving embellishments
In succeeding generations,
Until little children to their mothers'³⁷⁵

Knees came to listen in awe to the story:
"Once upon a time, the sun-god
Loved a maiden, and drove his chariot
Across the night to her prison,"
Until even these grew dim and faded
In distance and time, leaving only
A cloudless sky and the murmuring waves,
Remembrances echoing from
A distant shore beyond the reach of sight.³⁷⁶

³⁷⁴Erasmus.

³⁷⁵Erasmus. Bullfinch. Arnold.

³⁷⁶Arnold. Radcliffe.

RECOLLECTION 3

Nebuchodonosor, whom some will have to be the famous Syrian King of Diodorus, beautifully repaired that City; and so magnificently built his hanging gardens; that from succeeding Writers he had the honour of the first.³⁷⁷

And freely mighty kings thereof partake, Freely great cities,
freely honoured friends.³⁷⁸

According to Diodorus Siculus, the sepulchre of Ninus, the first king of Babylon, was ten stadia in length, and nine in depth; it had the appearance of a vast citadel, and was at a considerable distance from the city of Babylon.³⁷⁹

Hieronymus placed it in being free from all annoyance; Diodorus in this state when combined with honour.³⁸⁰

And freely mighty kings thereof partake,
Freely great cities, freely honoured friends.³⁸¹

³⁷⁷Browne; *Garden*.

³⁷⁸Theocritus.

³⁷⁹Ovid.

³⁸⁰Cicero.

³⁸¹Theocritus.

Diodorus Siculus says that this man
Was the first son of *Teutamus*,
Who, having married the daughter of *Creteus*,
Went with some *Pelasgians* to *Crete*,
Where he settled and became its first king.
The Greek authors, *Apollodorus*,
Strabo, *Diodorus Siculus*, and *Pausanias*,
Say that *Io* was the daughter
Of this first king; that *Jupiter* carried³⁸²

Her away to *Crete*, where she bore a son
Who reigned in *Egypt*, and who built
A labyrinth, as *Pliny the Elder*
Asserts, like the one in *Knossos*,
Which is described by *Strabo*, *Diodorus*
Siculus, and *Herodotus*.
Epicurus would have also said so,
Had he agreed with *Hieronymus*
And *Aristippus*. His death occasioned³⁸³

Great lamentations, and his funeral
Was honored with a great host
Of mourners, each of whom wept as if he
Had lost a father or a brother.
Old wives remembered that his trousers were
Decorated with red stripes, of
Which he was extremely vain, but being
Much too short, the whole of his boots
Were always visible below their cuffs.³⁸⁴

³⁸²Ovid.

³⁸³Ovid. Ovid. Cicero. Foxe, John; *Foxe's Book of Martyrs*.

³⁸⁴Foxe. Parkman; *Oregon Trail*.

RECOLLECTION 4

***Ahasuerus* (whom many conceive to have been *Artaxerxes Longimanus*) in the Countrey and City of Flowers, and in an open Garden, entertained his Princes and people, while *Vasthi* more modestly treated the Ladies within the Palace thereof.³⁸⁵**

“I’ve entertained many guests, but none–The whole secret,”
broke off Judge Henry, “lies in the way you treat people.”³⁸⁶

Tzu-kung said, To treat the people with bounty and help the many, how were that?³⁸⁷

The gates of high Olympos were open wide and clanging,
Deserted ev’ry palace, the golden city empty.³⁸⁸

And he hath within many fair gardens, and many fair halls and chambers; and the pavement of his halls and chambers be of gold and silver.³⁸⁹

Ctesias wrote that *Arbaces* a Mede being
Brought before *Sardanapalus*
In his palace, and seeing his voluptuous
Life amongst women, revolted
With the Medes, and in conjunction with *Belesis*
A Babylonian, caused him
To set fire to his palace. But he
Is contradicted by others.
Duris writes that *Arbaces* killed himself;³⁹⁰

And *Cleitarchus*, that *Sardanapalus*
Died of old age, after he lost
His dominion over Syria; and
Herodotus, that the Medes rebelled
First against the Assyrians, without
Conquering them, and at first they
Had no king, but after some time set up
Dejoces over them, and that
He reigned over the Medes in peace and quiet.³⁹¹

Such a confusion is just as absurd
As if one were to tell of times
When *Homer* and *Virgil* sat and smoked pipes
Together in the Mermaid Tavern,
While *Shakespeare* and *Moliere*, crowned with roses,
Sipped Falernian beneath the palmwoods’
Shade on the Nevsky Prospect, and sketched a
Play for performance that same night
Before *Napoleon* in the Colosseum.³⁹²

³⁸⁵Browne; *Garden*.

³⁸⁶Wister.

³⁸⁷Confucius; *Sayings*.

³⁸⁸Hall, Jennie.

³⁸⁹Mandeville.

³⁹⁰Newton, Isaac, Sir; *The Chronology of Ancient Kingdoms*.

³⁹¹Newton; *Chronology*.

³⁹²Allen.

RECOLLECTION 5

Cyrus the elder brought up in Woods and Mountains, when time and power enabled, pursued the dictate of his education, and brought the treasures of the field into rule and circumscription, So nobly beautifying the hanging Gardens of *Babylon*, that he was also thought to be the authour thereof.³⁹³

It settled the matter; and they pursued the accustomed circuit; which brought them again, after some time, in a descent among hanging woods, to the edge of the water, and one of its narrowest parts.³⁹⁴

Pul therefore was succeeded at *Nineveh* by his elder son *Tiglath-pileser*, at the same time that he left *Babylon* to his younger son *Nabonassar*.³⁹⁵

That there is also but one flow of time is consistent with the plain dictates of our understanding.³⁹⁶

We hanged our harps upon the willows in the midst thereof.³⁹⁷

³⁹³Browne; *Garden*.

³⁹⁴Austen, Jane; *Pride and Prejudice*.

³⁹⁵Newton; *Chronology*.

³⁹⁶Meridian Conference.

³⁹⁷*Psalms*.

Memory, that mass of multiplying
Facts, hazards the art of abridgment,
Culls the events and drops the circumstances
Which lack a figurative sense,
Though even those taken as marvellous
Are simple and physical facts
(The elements, the winds, stars, and comets)
Personified by the working
Mechanisms of faulty understanding,³⁹⁸

Disfigured by accidental causes
Dependent on the human mind,
By the confusion of signs which represent
Ideas, the want of precision
And permanence in language and perfection
In writing, so that that all such
Pretended history is only the
Description of this phenomena
Of ideas misconceived and misformed.³⁹⁹

Next in memory's picture-gallery:
A maze of narrow thoroughfares,
And tall, grey houses, and huge cathedrals
Of ancient, quaint architecture,
A continental city, where new life
Awaits: a new life, but feeding
Itself on time-worn materials, like
A tuft of moss growing between
The stones of the city's disused wall.⁴⁰⁰

³⁹⁸Hume, David; *The History of England*. Volney.

³⁹⁹Volney.

⁴⁰⁰Hawthorne; *Scarlet Letter*.

RECOLLECTION 6

And these were the common Trees about *Babylon*, and the East, whereof the Ark was made; and *Alexander* found no Trees so accommodable to build his Navy; And this we rather think to be the tree mentioned in the Canticles, which stricter Botanology will hardly allow to be Camphire.⁴⁰¹

And the astronomer didn't think that the Navy analysts had used the correct technique in making their measurements.⁴⁰²

For there was the Tree of Life; whereof he was so long allowed to eat, as he should forbear to eat of the tree of Knowledge of Good and Evil; which was not allowed him.⁴⁰³

Do not make the rather common mistake of thinking that they are too familiar to be interesting; they are never likely to be.⁴⁰⁴

In April, 1862, the Navy Department called Eads to Washington to make designs for more ironclads,—or rather boats made wholly of iron.⁴⁰⁵

⁴⁰¹Browne; *Garden*.

⁴⁰²Ruppelt, Edward J.; *The Report on Unidentified Flying Objects*.

⁴⁰³Hobbes.

⁴⁰⁴Adams.

⁴⁰⁵How.

In the fire they put their pigs of iron,
Placing four of them together,
Which softening by degrees, they heat till
The metal melds all together:
Then they carry it to a great hammer,
Raised by the power of a water
Wheel, where they beat it into a thick square;
This they carry back to the fire
To heat again, then back to the hammer.⁴⁰⁶

Since it is important that the softened,
Red-hot iron should receive its
Blows before it cools, the form of the cam
On the wheel is such that the hammer,
Instead of being lifted a little,
Is thrown up with a jerk the instant
After it strikes, then driven down with such
Speed that about double the number
Of strokes can be made in a given time.⁴⁰⁷

Thus did he shape measures for the pleaders,
And cut morsels for them out of
Little parcels, fragments, scantlings, and shreds
Of memory fused with memory,
Concealing, suppressing, disannulling,
And abolishing whatever
Did not fit his crucible or alloy
With the hot memory shaped from
What might be wrought or graven from the past.⁴⁰⁸

⁴⁰⁶Nicholls, H. G.; *Iron Making in the Olden Times*.

⁴⁰⁷Babbage.

⁴⁰⁸Rabelais. Milton.

RECOLLECTION 7

To omit the noble reticulate work, in the chapters of the pillars of *Solomon*, with Lillies, and Pomegranats upon a network ground; and the *Craticula* or grate through which the ashes fell in the altar of burnt offerings.⁴⁰⁹

And besides the drink offerings they built an altar to Apollo, saviour of ships, and burnt thigh bones; and Orpheus dedicated his lyre; whence the place has the name of Lyra.⁴¹⁰

Upon the ground story, a fair gallery, open, upon pillars; and upon the third story likewise, an open gallery, upon pillars, to take the prospect and freshness of the garden.⁴¹¹

And he said, Behold the fire and the wood: but where is the lamb for a burnt offering?⁴¹²

But man is a Noble Animal, splendid in ashes, and pompous in the grave, solemnizing Nativities and Deaths with equal lustre, nor omitting Ceremonies of bravery, in the infamy of his nature.⁴¹³

⁴⁰⁹Browne; *Garden*.

⁴¹⁰Apollonius.

⁴¹¹Bacon.

⁴¹²*Genesis*.

⁴¹³Browne, Thomas, Sir; *Hydriotaphia, urne-buriall, or, a discourse of the sepulchral urnes lately found in Norfolk*.

They stood with heads bowed, but he, far off, looked
Across the cobbled strand, and spoke,
“Come, let us call this the sacred island
Of the night and offer such due
Sacrifices as we can, and here build
An altar on the shore, and offer
The thighs of horned goats.” They cut the thigh bones,
Wrapped them in fat, and on a fire
Laid them, and poured blood-red wine over them,⁴¹⁴

While their young men stood near with five-pronged spits.
Pure oil and incense on the fire
They threw, and fat of goats. At times the fire
Subsided into orange embers,
Until the young men were scarcely visible;
Then a one would drop upon it
A piece of goat fat, and a bright flame, quickly
Springing up, would reveal the crowd
Of solemn faces, motionless and bronze.⁴¹⁵

After the sacrifices were over
There was time to wander again
Across the strand and to sit on the cobbles
Under a glorious train ascending,
A broad and ample road whose way is marked
By embers in the sky. “These things,”
He said, “require minute, close scrutiny,
As the embers cool and the smoke
Fades, the darkened sky grows bright.”⁴¹⁶

⁴¹⁴Apollonius. Homer; *Odyssey*.

⁴¹⁵Homer; *Odyssey*. Virgil; *Aeneid*. Parkman; *Oregon Trail*.

⁴¹⁶Hall, Jennie. Milton. Carlyle; *The French Revolution*.

RECOLLECTION 8

Unto whom we owe the very name of Paradise: wherewith we meet not in Scripture before the time of Solomon, and conceived originally *Persian*.⁴¹⁷

(Conceived of as) having no name, it is the Originator of heaven and earth; (conceived of as) having a name, it is the Mother of all things.⁴¹⁸

By his side lay his bow and arrow, wherewith to resume the chase with phantom hunters in the Indian paradise.⁴¹⁹

And she conceived again, and bare a son; and said, Now this time will my husband be joined unto me, because I have born him three sons: therefore was his name called Levi.⁴²⁰

That sight will be as pleasing unto me,
As Paradise was to Adam, the first day
Of his creation.⁴²¹

⁴¹⁷Browne; *Garden*.

⁴¹⁸Laozi.

⁴¹⁹Raymond, Ethel T.; *Tecumseh*.

⁴²⁰*Genesis*.

⁴²¹Marlowe.

Solomon's throne was made of ivory,
With six steps, and a dozen lions
Resting at his feet. The queen of the south
Was astonished when she saw it:
"Come forth, O daughters of Zion, and see
The crown of Solomon wherewith
His mother crowned him with her hands, and formed
His curling locks, and made his temples
Shine, and breathed youth and vigor on his face,"⁴²²

Like polished ivory or Parian marble
When enchased in gold, like a
Statue of snow-white ivory, of such
Beauty no woman can carry.
So young, but already splendor and truth
Robed him; already the dangerous,
Tender regard of the gods marked him out.
He to whom the burden and duty
They bound, at his earliest breath, of showing⁴²³

Us their own grave beauty, they loved and crowned.
What delicacy, what beauty,
What contrivance, do they not illustrate
Each the other in turn? But he
Is gone; he neither loves nor hates, and gone
With him are the splendor and truth
And beauty he bore, leaving only echoes,
Some on vellum and some on parchment,
Finely colored like any painted paper.⁴²⁴

⁴²²Knox, John; Latimer, Hugh; Welch, John; *The Pulpit Of The Reformation*. Virgil; *Aeneid*.

⁴²³Virgil; *Aeneid*. Ovid. Marquis.

⁴²⁴Marquis. Berkeley; *Three Dialogs*. Jastrow. Rabelais.

RECOLLECTION 9

Some commend the exposure of these orders unto the Western gales, as the most generative and fructifying breath of heaven.⁴²⁵

Alas, was this too a Breath of God; bestowed in Heaven, but on earth never to be unfolded!⁴²⁶

Error has no place;
That creeping pestilence is driven away,
The breath of heaven has chased it.⁴²⁷

A mighty King of this world brought homage unto him in his monastery and put unto him this question, saying: "If so it is that the Land of Purity should be in all the Ten Regions, how then is it declared unto us in the Sutra that it is in the Western Heaven?"⁴²⁸

O, they are means to bring thee unto heaven!⁴²⁹

⁴²⁵Browne; *Garden*.

⁴²⁶Carlyle; *Sartor Resartus*.

⁴²⁷Cowper.

⁴²⁸Shinran; Beck, L. Adams; Yamabe, S.; *Buddhist Psalms*.

⁴²⁹Marlowe.

When the stars shine clear, and the moon is bright,
And the beach and jutting headland
Stand in the ineffable radiance
That breaks from the serene of heaven,
The stars can then be told. Then, Minerva,
From whose hand the olive trees bear,
Who make the fields your care, from heaven shed
On us the riches of your rain
As the moon and stars cast their light, and see: ⁴³⁰

Avatars illumine their limited
Evens and vanish like plunging
Stars; they are fixed in the whirling heavens
No firmer than falling stars; brief
Lords of the change, they pass like a blossom
Of summer-blown shallop over
The clover and tossed tides of grass, or like
A breath in the face of a mirror,
Or like the circling spheres of heaven. ⁴³¹

What light gilds the sky and clouds, and paints
The heavens, what fast-abiding
Light out of the horizon of heaven?
What sound except the mournful note
Of a small desert owl, which has often
Mised the weary wanderer,
Breaks the deep silence? I know, for I lived
Half my life in the sight of this
Beauty, and the other half was ruined. ⁴³²

⁴³⁰Homer; *Iliad*. Virgil; *Georgics*.

⁴³¹Marquis.

⁴³²Thoreau. Jastrow. Layard. Bion et al.

RECOLLECTION 10

Arise O North-winde, and blow thou South upon my garden, that the spices thereof may flow out; For the North-winde closing the pores, and shutting up the effluvioms, when the South doth after open and relax them; the Aromatical gummies do drop, and sweet odours fly actively from them.⁴³³

When his life was drawing to a close, light was manifested about him as a cloud of glory, yea, and music of the heavenly places, sweet and excelling in harmony, and sweet odours scattered about him.⁴³⁴

I rose up to open to my beloved; and my hands dropped with myrrh, and my fingers with sweet smelling myrrh, upon the handles of the lock.⁴³⁵

. . . thou art to me
A Fly, that up and down himself doth shove
Upon a fretful rivulet, now above,
Now on the water vex'd with mockery.⁴³⁶

My beloved is gone down into his garden, to the beds of spices, to feed in the gardens, and to gather lilies.⁴³⁷

⁴³³Browne; *Garden*.

⁴³⁴Shinran.

⁴³⁵*Song of Songs*.

⁴³⁶Wordsworth, William; *Poems in Two Volumes, Volume 1*.

⁴³⁷*Song of Songs*.

His garden, too, glowed with flowers: hollyhocks
As tall as trees, and the sweetbriars
Gave out, morning and eve, the scent of spice
And apples, an orchard of aroma,
Of pomegranates, with pleasant fruits,
Camphire and spikenard, spikenard
And saffron; calamus and cinnamon:
A fountain of gardens, a well
Of living waters, and streams from Lebanon.⁴³⁸

“Come with me, my spouse, from Lebanon come:
Look from the top of Amana,
From the top of Shenir and from Hermon,
From the lions dens, from the dens
Of leopards, you who have been on mountain
Tops whose heads are high in the clouds,
And have looked when the sun rose and the valley
Touched with such light as made it seem
As if the world were being born again.”⁴³⁹

Now only memory broods in the garden
Where we used to walk, where his roses
Bloomed, their fragrance filled with the remembrance
Of a beauty overpowering
All analysis and comparison,
A vision outlasting all other
Memory, like a woven flower wreath
On an elder's brow, like a faint
Breeze stirring the air in a secret garden.⁴⁴⁰

⁴³⁸Bronte, Charlotte. *Song of Songs*.

⁴³⁹*Song of Songs*. Burnett.

⁴⁴⁰Churchill. Parkman; *Oregon Trail*. Emerson; *Essays*. Burnett.

RECOLLECTION 11

And though in these Northern Regions we are too much acquainted with one Ivy, we know too little of another, whereby we apprehend not the expressions of Antiquity, the Splenetick medicine of *Galen*, and the Emphasis of the Poet, in the beauty of the white Ivy.⁴⁴¹

Bold little beauty,
Bedecked with thee,
Nature forswears Antiquity.⁴⁴²

Another class live above this mark to the beauty of the symbol,
as the poet and artist and the naturalist and man of science.⁴⁴³

And I will beg a little more of your attention, to tell you, that
Aldrovandus, and divers physicians, commend the Eel very
much for medicine, though not for meat.⁴⁴⁴

It is no shame to be a poet, though it is to be a bad one.⁴⁴⁵

⁴⁴¹Browne; *Garden*.

⁴⁴²Dickinson.

⁴⁴³Emerson; *Essays*.

⁴⁴⁴Walton.

⁴⁴⁵Dryden; *Discourses*.

Since death must be the Lucina of life,
And even pagans could doubt whether
To live, were to die, and since even our
Longest sun sets; therefore it cannot
Be long before we lie down in darkness.
Time grows old itself, bids us hope
In no long duration: diuturnity
Is a dream. O, but it is a
Fine place to dream in, with cascades and cool ⁴⁴⁶

Rocks lined with hypnum, shaded with maple,
Dogwood, alder, willow; lady-
Ferns where no hand may touch them; light filtered
By translucent leaves; groves of cedar
Mixed with goldenrod. The elements merge
In the night like exiled brothers
Returning to the home of their childhood,
Like a soft evening breeze enwinding
All rocks, woods, endless wilds in dulcet streams, ⁴⁴⁷

Like the flakes that fall thick upon a winter's
Day, when Jove is minded to snow,
And lulls the wind to rest, and snow falls hour
After hour until it lies
Heavy upon the work of men, all their
Work buried by the heavens, heavy
With snow. Even thus thickly does time fall
From one hour to the next, time
In its whole passing from silence to silence. ⁴⁴⁸

⁴⁴⁶Browne; *Hydriotaphia*. Muir, John.

⁴⁴⁷Muir, John. Whitman.

⁴⁴⁸Homer; *Iliad*.

RECOLLECTION 12

The Triumphal Oval, and Civicall Crowns of Laurel, Oake, and Myrtle, when fully made, were pleated after this order.⁴⁴⁹

A right holy precinct runs round it, and a ceaseless stream that falleth from the rocks on every side is green with laurels, and myrtles, and fragrant cypress.⁴⁵⁰

Nor column trophied for triumphal show?⁴⁵¹

Whene'er he spoke, his voice was heard around,
Loud as a trumpet, with a silver sound;
A laurel wreathed his temples, fresh, and green,
And myrtle sprigs, the marks of love, were mixed between.⁴⁵²

The laurel and the myrtle seeing the pear tree cut down cried out with a loud voice: "O pear-tree!"⁴⁵³

He rushed from the lodge, yelled a Sioux war-cry,
Shouted his triumph and defiance,
And darted out upon the dark prairie,
Leaving the whole village behind
In a tumult, with the howling and baying
Of dogs, and the yells of enraged
Warriors, a rush of horrible voices
Full of cries for fiercest vengeance.
No man would have made light of the fighting⁴⁵⁴

Even if he could have gone about it
As scatheless and unwounded
As if Minerva had shielded him safe
From the storm of spears and arrows,
As when in the midst of a cloud of dust
And stunned by the stampeding herd,
Drunk with the chase and fierce toward the prey,
With antelope bounding on all
Sides, and the buffalo running all around⁴⁵⁵

In the dark of the night, like the ocean
Beating upon a distant coast.
You earth, receive my lance in rest, you stars,
My arrows in the sky; a blazing
Spear, a bow, a midnight sheaf of arrows
In the sky: my soul is among
Lions: and I lie even among them
That are set on fire, even
The sons of men, whose teeth are spears and arrows.⁴⁵⁶

⁴⁴⁹Browne; *Garden*.

⁴⁵⁰Bion et al.

⁴⁵¹Byron.

⁴⁵²Chaucer; *Palamon and Arcite*.

⁴⁵³da Vinci.

⁴⁵⁴Parkman; *Oregon Trail*. Cooper. Homer; *Iliad*.

⁴⁵⁵Homer; *Iliad*. Parkman; *Oregon Trail*.

⁴⁵⁶Parkman; *Oregon Trail*. Thoreau. Hawthorne; *Scarlet Letter*.
Psalms.

RECOLLECTION 13

**Whereon we shall not insist, because from greater
Antiquity, and practice of consecration, we meet with the
radiated, and starry Crown, upon the head of *Augustus*,
and many succeeding Emperors.**⁴⁵⁷

Rage the wicked, then, never so violently, the crown shall not
fall from the head of the wise, nor wither.⁴⁵⁸

Hence the Dragon and Beast have the same heads and horns;
but the heads are crowned upon the Dragon, and the horns
upon the Beast.⁴⁵⁹

The mausoleum of Augustus was on a much more extensive
scale, and consisted of four cylindrical stories, one above the
other, decreasing in diameter as they ascended, and the topmost
of all was crowned with a colossal statue of the Emperor.⁴⁶⁰

In sealing letters-patent, rescripts, or epistles, he at first used
the figure of a sphinx, afterwards the head of Alexander the
Great, and at last his own, engraved by the hand of
Dioscorides; which practice was retained by the succeeding
emperors.⁴⁶¹

⁴⁵⁷Browne; *Garden*.

⁴⁵⁸Boethius.

⁴⁵⁹Newton; *Observations*.

⁴⁶⁰Slater, John; Smith, T. Roger; *Architecture Classic and Early
Christian*.

⁴⁶¹Suetonius; Forester, Thomas; Thomson, Alexander, M.D.; *The
Lives of the Twelve Caesars*.

Do you recall the name of the warrior?
The others remembered that their
Formidable and daring enemy
Had been even in the bosom
Of their encampment, working injury,
And recalled too their fearful rage.
Do the great heroes of the past perish
From the memory of a people?
Does the record of past events pass away?⁴⁶²

Perhaps, as for Ossian, imagination
Has replaced memory, and changed
The warrior to a god. History,
Like love, encircles the hero
With imaginary brightness, a crown
Of evanescent vapor wreathed
Around the courses of human action.
Some write a narrative of war
And unknown heroes, and entangle them⁴⁶³

In a twisted skein of new obscurity,
The threads of politic and shrewd
Design that run through all our purposes,
And charge our mind with meanings
Heroes never had, or, having, kept concealed.
Such heroes belong to their time
And world, like a brisk wind down from the hills
Blowing, or sparks from a fire
Streaming over the scented, pale sagebrush.⁴⁶⁴

⁴⁶²Cooper. Jastrow.

⁴⁶³Schiller. Cooper. Steele. Cowper.

⁴⁶⁴Cowper. MacCulloch, J. A.; *The Religion of the Ancient Celts*.
Parkman; *Oregon Trail*.

RECOLLECTION 14

Beside the ancient practise of Noble Persons, to conclude in Garden-Graves, and Urnes themselves of old, to be wrapt up flowers and garlands.⁴⁶⁵

Then she had wandered through the deep grass, her tiny feet scarcely turning a fragile blade, and she had dreamed beside some old faded flowers.⁴⁶⁶

The flowers of delight blossom on all sides, in every form, but where is your heart's thread to weave them in a garland?⁴⁶⁷

I raise my fairest and freshest flowers in the old mould.⁴⁶⁸

Cast on him garlands and blossoms: all things have perished in his death, yea all the flowers are faded.⁴⁶⁹

⁴⁶⁵Browne; *Garden*.

⁴⁶⁶Grey, Zane.

⁴⁶⁷Tagore; *Creative Unity*.

⁴⁶⁸Thoreau.

⁴⁶⁹Bion et al.

The wind stirs many waves, keeping nature
Fresh, the spray blowing in your face,
Reeds and rushes waving; ducks by the hundred,
Uneasy in the rolling surf,
In the raw wind, poised just ready to rise,
And now going off with a clatter
And a whistling, flying against the stiff
Gale with reefed wings, or else circling
Round first, with all in a circle flying;⁴⁷⁰

Gulls wheeling overhead, muskrats swimming,
Their dens here and there like haystacks;
And countless mice and moles and winged titmice
Along the sunny, windy shore;
Cranberries tossed on the waves and heaving
Up on the beach, their little red
Skiffs beating about among the alders;
Such healthy natural tumult
As proves the last day is not yet at hand.⁴⁷¹

It has a glory, and none can share it:
The thought thereof is awful, sweet,
And holy, chasing away all worldliness
And folly; coming sometimes like
Fearful claps of thunder, or the low rumble
Of the distant surf, or sometimes
Like a whispered secret of a wondrous,
Faint-heard hymn breathing about us,
A laurel wreath, soft floating on high, suspended.⁴⁷²

⁴⁷⁰Thoreau.

⁴⁷¹Thoreau.

⁴⁷²Keats.

RECOLLECTION 15

Since however they first began, the AEgyptians thereby expressed the processe and motion of the spirit of the world, and the diffusion thereof upon the Celestiall and Elementall nature; implied by a circle and right-lined intersection.⁴⁷³

Now the motion of the outer circle he called the motion of the same, and the motion of the inner circle the motion of the other or diverse.⁴⁷⁴

For these decay: but not for that decays
The yearning, high, rebellious spirit of man
That never rested yet since life began
From striving with red Nature and her ways.⁴⁷⁵

The nature of the universe did once certainly before it was created, whatsoever it hath done since, deliberate and so resolve upon the creation of the world.⁴⁷⁶

Circles and right lines limit and close all bodies, and the mortal right-lined-circle must conclude and shut up all.⁴⁷⁷

⁴⁷³Browne; *Garden*.

⁴⁷⁴Plato; *Timaeus*.

⁴⁷⁵Lewis, C. S.; *Spirits in bondage; a cycle of lyrics*.

⁴⁷⁶Marcus Aurelius.

⁴⁷⁷Browne; *Hydriotaphia*.

Then here will we hide, idle here and abide,
In this cover close by the sea,
Where the reeds quiver in the constant current.
Let us question and wait; let us
Listen to the whispers of love and death
Where silences into music
Flower. Nymph of mine indolence, let us
Here stay, where reeds to the tide bow.
Heavenly whispers murmuring I hear,⁴⁷⁸

Labial gossip of night, sibilant chorals,
A minor key gently ascending,
Mystical breezes wafting soft and low,
The tide flowing, forever flowing,
Time and the tide flowing forever wide,
The ebb and the flow of the tide,
So high it touches near to the circle
Of the moon, there as the moon makes
Her turn. Once we ranged the open heavens,⁴⁷⁹

And tracked the sun's bright pathway, and watched how
The pale moon waxed and waned, and rested
Not until we learned the comings and goings
Of every star, every
Revolution of the wheel of circling
Spheres. But now let me leave you never,
And quietly watch while you are sleeping,
And be carried with your motion,
As on the oceans' current, as on the tide.⁴⁸⁰

⁴⁷⁸Marquis. Whitman.

⁴⁷⁹Whitman. Melville. da Vinci. Mandeville. Boethius.

⁴⁸⁰Boethius. Mercer.

ILLUMINATION

ILLUMINATION I

**Flat and flexible truths are beat out by every hammer; But
Vulcan and his whole forge sweat to work out *Achilles* his
armour.**⁴⁸¹

And I: "The proofs, which show the truth to me,
Are the works subsequent, whereunto Nature
Ne'er heated iron yet, nor anvil beat."⁴⁸²

When the furnace is at work, about twenty tons a week are
reduced to pig iron; in this state it is carried to the forges,
where about eight tons a week are hammered out into bars,
ploughshares, &c., ready for the smith.⁴⁸³

The Devil is that *Vulcan*, out of whose Forge come the
instruments of our *Wars*, and it is he that finds us Employments
for those Instruments.⁴⁸⁴

Now Cytherea leads the dance, the bright moon overhead;
The Graces and the Nymphs, together knit,
With rhythmic feet the meadow beat, while *Vulcan*, fiery red,
Heats the Cyclopien forge in *Aetna's* pit.⁴⁸⁵

⁴⁸¹Browne; *Garden*.

⁴⁸²Dante.

⁴⁸³Nicholls.

⁴⁸⁴Mather, Cotton; Mather, Increase; *The Wonders of the Invisible
World*.

⁴⁸⁵Horace.

In constant motion night and day, lambent
Crucibles swing and tip, casting
Showers of luminous sparks: he wondered
If he would ever grow accustomed
To it, the air shaking with deafening
Thunder, whistles shrieking warning
All around, liquid metal pouring past
Him, waves of heat like the anger
Of *Vulcan*, stoking his revenge red-hot.⁴⁸⁶

But he found in fire motion and activity,
Each in its proper place and moment,
Each a part of those arrangements from which
This world of things is established,
And by which it is preserved, when once it
Had been thrown into the proper
Motion, the ceaseless heat of the sun renewing
Its lusty brood to bloom and bear
The revolutions of their vortices.⁴⁸⁷

The crescent moon, the evening star, the embers
Of the wood fire, the pungent
Smoke blown round, the shadowy trees, the night
That steals on; the body, sluggish,
Aged and cold; the embers left from earlier
Fires now grown dim, shall duly
Flame again: from embers long since gone cold,
The long summer days rekindle
The grass and flowers, and the golden corn.⁴⁸⁸

⁴⁸⁶Darwin, Erasmus; *Botanic Garden*. Sinclair.

⁴⁸⁷Volney. Lucretius. Hooper.

⁴⁸⁸Jefferies. Whitman.

ILLUMINATION 2

The Turks who pass their days in Gardens here, will have Gardens also hereafter, and delighting in Flowers on earth, must have Lillies and Roses in Heaven.⁴⁸⁹

They also said that the starry heaven is also seen from their earth; and that a star larger than the rest appears to them towards the west; it was said from heaven that this is our sun.⁴⁹⁰

But the true earth is pure and situated in the pure heaven—there are the stars also; and it is the heaven which is commonly spoken of by us as the ether, and of which our own earth is the sediment gathering in the hollows beneath.⁴⁹¹

Therefore the Tao is great; Heaven is great; Earth is great; and the (sage) king is also great.⁴⁹²

Neither for earth nor for heaven is there a must.⁴⁹³

⁴⁸⁹Browne; *Garden*.

⁴⁹⁰Swedenborg.

⁴⁹¹Plato; *Phaedo*.

⁴⁹²Laozi.

⁴⁹³Nietzsche; *Human*.

There are so many systems, so many
Stars scattered though the universe,
Every star a sun fixed in its place
Like our sun, each with its planets
Around it, its own earth turning round it:
On a clear night we can see millions
Of stars and suns, each flooding space and time
With their heat and light; from each star,
A message swells at the velocity⁴⁹⁴

Of light, like spherical, continuous
Signals in all direction, waves
Infinite of life in death, as a star's
Travelling light survives its star!
Or does such light carry no true meaning,
Much as the glimmer of a star
Reflected on the water may deceive
A sailor, who at times has been
Said to be misled by the reflection?⁴⁹⁵

The pale grey sky is growing blue and cold;
The stars shine with a dimmer light;
The earth is wet, the leaves covered with dew;
Distant come sounds of life and voices.
The morning breeze flutters over the earth.
As the sun rises and the morning
Mist begins to fade away, the distant
Hills emerge blue on the horizon,
Faint echoes of starlight caught by the dawn.⁴⁹⁶

⁴⁹⁴Swedenborg. Hooper. Tyndall, John.

⁴⁹⁵Tyndall, John. Abbot et al. Darwin, Erasmus; *Botanic Garden*.

⁴⁹⁶Turgenev. da Vinci.

ILLUMINATION 3

That white flowers have yellow thrums or knops.⁴⁹⁷

I only have a little white flower for you to know me by.⁴⁹⁸

A red dead-nettle, a mauve thistle, white and pink bramble flowers, a white strawberry, a little yellow tormentil, a broad yellow dandelion, narrow hawkweeds, and blue scabious, are all in flower in the lane.⁴⁹⁹

To the limes the bees went when their pale yellow flowers appeared.⁵⁰⁰

The three colours of yellow, blue, and green might be produced; as green leaves with yellow and blue flowers.⁵⁰¹

⁴⁹⁷Browne; *Garden*.

⁴⁹⁸Ewald.

⁴⁹⁹Jefferies.

⁵⁰⁰Jefferies.

⁵⁰¹Darwin, Erasmus; *Botanic Garden*.

And soon he found them, each with a flower
Basket in hand, there in the wild
Meadows near the seaside, delighting each
In the roses and the salt air.
“Come here, beautiful boy,” they sweetly sang,
“We bring baskets for you with lilies
Brimmed, with sheaves of pale violets and poppy-
Heads, and, twined into one posy,
Tender hyacinth and yellow marigolds,⁵⁰²

Laburnum rich in streaming gold, syringa
Ivory pure, the scented rose,
The sable yew; the lilac various
In array, now white, now sanguine;
Woodbine, pale and wan; hypericum, so
Thick a swarm of flowers; althaea
With the purple eye; and broom, yellow and
Bright as bullion pure; above all,
The jasmine, whose luxuriant sweets illumines⁵⁰³

More the bright profusion of her scattered
Stars. Returning spring,” they sang, “bring
Again the lilacs blooming, the drooping
Star in the west, and the thought of
Him I love, of his warm cheek and the bloom
of his fresh desire.” I see
A blooming world around, as I lie amid
Primroses, years of sweet primroses,
Endless springs of fragrant sweet primroses.⁵⁰⁴

⁵⁰²Bion et al. Virgil; *Ecloques*.

⁵⁰³Cowper.

⁵⁰⁴Cowper. Abbot et al. Gray, Thomas.

ILLUMINATION 4

**And the remarkable disposure of those yellow fringes
about the purple Pestill of Aaron, and elegant clusters of
Dragons, so peculiarly secured by nature, with an *umbrella*
or skreening Leaf about them.**⁵⁰⁵

The vines were laden with dark purple grapes, and the slender
twigs of the maple, then tasseled with their clusters of small
red flowers, now hung out a gorgeous display of leaves stained
by the frost with burning crimson.⁵⁰⁶

Day after day the clouds clustered gray and purple and
black.⁵⁰⁷

The Purple and Yellow made an Orange.⁵⁰⁸

Coming—the mellow days:
Crimson and yellow leaves;
Languishing purple and amber fruits
Kissing the bearded sheaves
Kindly!⁵⁰⁹

⁵⁰⁵Browne; *Garden*.

⁵⁰⁶Parkman; *Oregon Trail*.

⁵⁰⁷Grey, Zane.

⁵⁰⁸Boyle, Robert; *Experiments and Considerations Touching
Colours*.

⁵⁰⁹Abbot et al.

When blue and yellow are mixed together,
Blue conceals the weaker yellow,
Orange, and red; but yellow, on the other
Hand, veils indigo, violet
And blue. And those that are pale blue within,
And pale red without, these enclose
Each other immediately, so that
Their colors proceed in order:
Blue, green, yellow and red, pale blue and red.⁵¹⁰

As when descending lower, the orange
And the myrtle appeared in each
Sunny nook, each with its yellow blossoms,
And the scarlet pomegranate
Flowers and the paler arbutus mantling
The crags above. Or as at dawn
When through dark clouds the sun bursts, or as when
Pale moon quits Tithonus' saffron
Bed, and yields vine-leaf to ripening grapes.⁵¹¹

Such colors are peculiar and effective;
The dark, rich purple; the pale blue,
Of so fine and pure a tone. One iris
Is immediately encompassed
With a second, whose colors were in order
Purple, blue, green, yellow, faint pink.
Perhaps they are coming up through the grass,
Perhaps there are even clusters
Of purple and golden irises now.⁵¹²

⁵¹⁰Tyndall, John. Newton; *Optics*.

⁵¹¹Radcliffe. Virgil; *Georgics*.

⁵¹²Muir, John. Newton; *Optics*. Burnett.

ILLUMINATION 5

The rose at first is thought to have been of five leaves, as it yet groweth wilde among us; but in the most luxuriant, the calicular leaves do still maintain that number.⁵¹³

But these leaves conning you con at peril,
For these leaves and me you will not understand,
They will elude you at first and still more afterward, I will
certainly elude you.⁵¹⁴

There were five pink paper roses twisted in the veil, and eleven
bright green rose leaves.⁵¹⁵

For if any one thinks truly that a person is sitting, yet, when
that person has risen, this same opinion, if still held, will be
false.⁵¹⁶

As worldly schemes resemble Sibyl's leaves,
The good man's days to Sibyl's books compare,
The price still rising as in number less."⁵¹⁷

⁵¹³Browne; *Garden*.

⁵¹⁴Whitman.

⁵¹⁵Sinclair.

⁵¹⁶Aristotle.

⁵¹⁷Bullfinch.

He set his knee stoutly against the rock,
And straightway by the spring poplars
And elms arched overhead, pleached with leaves
Of green, over every green
Hedge and grassy mead, their thick June foliage
Green too, gave a sense of green color
Everywhere, reflected by conspicuous
Green insects: grasshoppers; bottle-
Green drakes; a lace-fly, with a green body⁵¹⁸

And delicate white wings. The shades of green
He checked off: one so pale it was
Nearly yellow, another bright and vivid,
And one as dark as jet; the intense
Green of the nearby foliage, growing pale
Shade by shade into the distance
Until, a mile off or more, bright green faded
Into the color of the sky:
Would that we could knot these greens for cockades!⁵¹⁹

Yet here, this day, we might repose, by green
Boughs pillowed in the cool shade,
And dream this summer afternoon away,
Dream until gray changed into green
In a place all filled with trembling leaves,
With birds on nests everywhere so
Soft and still, counting as gain what June may
Chance to give us: this warm summer,
This sweet repose, while these years are yet green.⁵²⁰

⁵¹⁸Bion et al. Jefferies.

⁵¹⁹Jefferies. Ruppelt. Twain; *Life*. Carlyle; *The French Revolution*.

⁵²⁰Virgil; *Eclogues*. Burnett. Horace.

ILLUMINATION 6

That the colour of the Caterpillar will shew again in the Butterfly, with some latitude is allowable.⁵²¹

They were likened to caterpillars, which, having passed through their vile state, are changed into chrysalides and then into butterflies, when they are given other clothing, and also wings of a blue or yellow, a silver or golden colour.⁵²²

But Queequeg, do you see, was a creature in the transition stage—neither caterpillar nor butterfly.⁵²³

Some of them he also observes to be bred of the eggs of other caterpillars, and that those in their time turn to be butterflies; and again, that their eggs turn the following year to be caterpillars.⁵²⁴

Is this material allowable?⁵²⁵

⁵²¹Browne; *Garden*.

⁵²²Swedenborg.

⁵²³Melville.

⁵²⁴Walton.

⁵²⁵Ruskin; *Poetry of Architecture*.

At once came forth whatever creeps the ground,
Insects wearing the liveries
Of pride, with spots of gold and purple, blue
And green. Not all minims of nature,
Some wonderous in corpulence and length,
Some with countless legs, some with wings.
Some to the sun their insect-wings unfold,
Waft on the breeze, or sink in clouds
Of transparent forms, thin glittering textures⁵²⁶

Of filmy dew loose to the wind and dissolved
In richest tinctures of the skies,
Where light disports, and with every beam
A new and transient color flings.
Stranger still are the spiders, brilliantly
Colored with crimson and purple,
Resembling flower buds, to thus deceive
The insects upon which they prey.
Huge crickets, black and bottle green, and wingless⁵²⁷

Grasshoppers of the most extravagant
Dimensions, will tumble around
Our feet, and crickets without number
Will dart among the tufts of grass,
Flashing like lightning, like the soft flutter
Of moths, never at rest, or like
The moon rising above the broken clouds,
And with a gradual swell coming
Into the darkness with all her own light.⁵²⁸

⁵²⁶Milton. Pope.

⁵²⁷Pope. Allen. Parkman; *Oregon Trail*.

⁵²⁸Parkman; *Oregon Trail*. Keats.

ILLUMINATION 7

And therefore providence hath arched and paved the great house of the world, with colours of mediocrity, that is, blew and green, above and below the sight, moderately terminating the *acies* of the eye.⁵²⁹

Cockades; green ones;—the colour of hope!⁵³⁰

We also learn'd in the Dye-houses, that Cloth being Dy'd Blew with Woad, is afterwards by the Yellow Decoction of *Luteola* or Woud-wax or Wood-wax Dy'd into a Green Colour.⁵³¹

The dream—and diction—of a God, did the world then seem to me; coloured vapours before the eyes of a divinely dissatisfied one.⁵³²

Petrarch, outstepping from the shady green,
Starts at the sight of Laura; nor can wean
His eyes from her sweet face.⁵³³

Like the rising moon on the horizon,
To his eye there was but one light,
One tide to which his blood would ebb and flow,
And so they worshipped his seated
Figure, painted a pale blue, the color
Of the moon on a quiet ocean,
A symbol of its power, at the period
Of junction, to raise water into
The clouds. The moon floats in its elements: ⁵³⁴

In water, air and fire, causes of
Its actions and appearances;
Like him, a being, effect and cause, agent
And patient, moving principle
And thing moved, like a great round serpent, azure
And gold, devouring his tail,
Folding and unfolding himself, eternally
Playing the music of the spheres;
And like a man, his feet together tied,⁵³⁵

Wrapped in a cloak of every color,
Like the face of nature, and bearing
A golden emblem of the sphere of fire;
And like another man, seated
On a flower of the lotus afloat
On a still sea, his face the orb
Of a full moon, his eye a blue lotus:
A confusion of superimposed
Appearances caught in shifting moonlight. ⁵³⁶

⁵²⁹Browne; *Garden*.

⁵³⁰Carlyle; *The French Revolution*.

⁵³¹Boyle; *Colors*.

⁵³²Nietzsche; *Zarathustra*.

⁵³³Keats.

⁵³⁴Abbot et al. Volney. da Vinci.

⁵³⁵da Vinci. Volney.

⁵³⁶Volney. Gaudapurnanandacakravarti; Cowell, Edward B.; *The Tattva-Muktavali*.

ILLUMINATION 8

Nor are only dark and green colours, but shades and shadows contrived through the great Volume of nature, and trees ordained not only to protect and shadow others, but by their shades and shadowing parts, to preserve and cherish themselves.⁵³⁷

Thus light and colours, as white, red, yellow, blue; with their several degrees or shades and mixtures, as green, scarlet, purple, sea-green, and the rest, come in only by the eyes.⁵³⁸

The sun came up in a glory of carmine, and the trees were brilliant in their varied shades of green.⁵³⁹

For it is part of it; even as the nature of any one leaf, is part of the common nature of all plants and trees.⁵⁴⁰

These are handsome birds, and with the green woodpeckers give colour to the trees.⁵⁴¹

⁵³⁷Browne; *Garden*.

⁵³⁸Locke; *Human Understanding*.

⁵³⁹Twain; *Life*.

⁵⁴⁰Marcus Aurelius.

⁵⁴¹Jefferies.

In green, and in other colors, sunlight
Passing through a diaphanous
Body acquires the tint of the body,
As if the color were compounded
Not from green or blue, from neither purple
Nor red, but from a confusion
Of them all, from one uniform white color,
Like T'ien Tan, who gathered up
A thousand white oxen, decked them with red⁵⁴²

Silk ribbons, and painted their bodies, dragon-
Like, with colored stripes, his favorite
Lavishly painted, its horns and tail, neither
Polled nor trimmed, festooned with ribbons
Of silk, and the finest of ornaments
suspended at its breast. Mounted
On the oxen were men dressed in white robes,
Veiled and ranged around a banner
The color of the morning sky, the obscure⁵⁴³

Remnant of a people once strong and brave.
Such forms of men and animals!
Such gleams of light lifted into relief,
Touched with such sharp tints as might mix
Upon our palette, with such precise
Distinctness as our pencils
Might delineate! Line and color span
Them, and always has, and shall forever
Hold them within the bounds of mixing colors.⁵⁴⁴

⁵⁴²Boyle; *Colors*. Newton; *Optics*. Sunzi.

⁵⁴³Sunzi. Clark. Volney.

⁵⁴⁴Volney. Emerson; *Essays*. Bronte, Charlotte. Whitman.

ILLUMINATION 9

**In such a grove doe walk the little creepers about the head
of the burre.**⁵⁴⁵

They entered a grove and walked down a wide path shaded by
great low-branching cottonwoods.⁵⁴⁶

The channels run everywhere, the creeper (of passion) stands
sprouting; if you see the creeper springing up, cut its root by
means of knowledge.⁵⁴⁷

The little red-bellied nuthatches, the chickadees, and little
brown creepers, threading the furrows of the bark of the pines,
searching for food in the crevices.⁵⁴⁸

He shall sleep in the temple and sit in the shady porches, and
walk in the sacred groves.⁵⁴⁹

Dusk shaded the grove where she walked; the birds
Ceased singing; and the wind whispered
Through the grove, and echoed the running water
Murmuring through the trees, whispering,
“Come live with me, and be my love, and we
Will prove the pleasure that valley,
Grove, meadow and mountain yield; where we will
Sit upon the rocks by shallow
Rivers, to whose music birds sing counterpoint.”⁵⁵⁰

As in the Yosemite, where granite
Walls glow with life, heads in the sky,
And feet in the groves and flowered meadows,
While birds, bees, and butterflies stir
All the air into music, the fleeting
And the permanent together
Meeting and blending, drawn into a close
And confiding communion, but
Not the green paradise of childish loves,⁵⁵¹

The games and songs, the kisses and flowers,
The draughts of wine in hidden groves,
Nor the artless pleasure of stealthy joy:
A temple stands within a grove,
A marble chapel draped with snowy fleeces
And with garlands crowned: oft, when she
Visited this quiet grove, muted voices
Issued from within the chapel,
And bid her stay, quiet joined to quiet.⁵⁵²

⁵⁴⁵Browne; *Garden*.

⁵⁴⁶Grey, Zane.

⁵⁴⁷Muller.

⁵⁴⁸Muir, John.

⁵⁴⁹Hall, Jennie.

⁵⁵⁰Grey, Zane. Walton.

⁵⁵¹Muir, John. Baudelaire.

⁵⁵²Baudelaire. Virgil; *Aeneid*.

ILLUMINATION 10

**And this not only observable in the Laws of direct Vision,
but in some part also verified in the reflected rays of
sight.**⁵⁵³

While my sight that was bound in my eyes unclosed,
As to long panoramas of visions.⁵⁵⁴

The diagrams therefore direct the student's vision and the
subject-matter affords the necessary information in each
case.⁵⁵⁵

Even its reflected light, then, is brighter than the direct ray of
the sun.⁵⁵⁶

Visions of glory, spare my aching sight!⁵⁵⁷

If a blind man could have his sight for one
Hour, and, at the first opening
Of his eyes, fix his sight upon the sun,
He would so admire the glory
Of it, that he would not willingly turn
His eyes from it. Brighter and brighter
The glorious light, more and more the pain!
What would a blind man give to see
Pleasant rivers, and meadows, and flowers,⁵⁵⁸

And fountains, that we have seen since we met?
See the frolicsome girls in blue
Pinafores, turning their skipping ropes!
See there the wild boar, the fiercest
Bristling monster that prowls these woods!
Perhaps we are not yet blind, though
We do not distinctly see; we have sight
Enough to turn toward the light,
Though not perhaps to distinguish objects⁵⁵⁹

Or colors; so are we not exactly
Blind, but left like we were lately
Smitten by the sun, bereft of vision
For some short time before sight re-
Shaped itself, like an angelic host hovering
Over a tabernacle, wings bent
To their eyes: the moon shines in my body,
But my blind eyes cannot see it:
The moon is within me, so too the sun.⁵⁶⁰

⁵⁵³Browne; *Garden*.

⁵⁵⁴Whitman.

⁵⁵⁵Olcott, William Tyler; *A Field Book of the Stars*.

⁵⁵⁶Lowell.

⁵⁵⁷Gray, Thomas.

⁵⁵⁸Walton. Grey, Zane. Nietzsche; *Human*.

⁵⁵⁹Walton. Abbot et al. Bullfinch. Browne; *Pseudodoxia*.

⁵⁶⁰Browne; *Pseudodoxia*. Dante. Kabir.

ILLUMINATION 11

Darknesse and light hold interchangeable dominions, and alternately rule the seminal state of things.⁵⁶¹

He who is light and inconstant, never holding long to one thing, is for all the world like a bird.⁵⁶²

Love has captivated even this Sun, who rules all things by his aethereal light.⁵⁶³

What means this, that this portion of things thus ebbs and flows alternately displeased and reconciled?⁵⁶⁴

And God made two great lights; the greater light to rule the day, and the lesser light to rule the night: he made the stars also.⁵⁶⁵

⁵⁶¹Browne; *Garden*.

⁵⁶²Boethius.

⁵⁶³Ovid.

⁵⁶⁴Augustine.

⁵⁶⁵*Genesis*.

Thus have I given the verdict, that space
And being and generation
Existed before heaven; that generation,
Moistened by water and inflamed
By fire, and taking the forms of earth
And air, presents strange and various
Appearances, full of powers dissimilar
And unbalanced, always moving
And being moved, combining and separating;⁵⁶⁶

As when barley is threshed and winnowed,
The seed falls, and the chaff is blown
Away, the close and heavy particles
One way, the loose and light another.
The music of generation twirls us
About as a leaf by the wind;
The leaves rustle in the wind of being
And space, glossy yellow-green leaves,
Ever in motion with the labor of⁵⁶⁷

The wind: the cymbals of the aspen clashing,
From the lowest to the highest
Bough, each leaf twirling forward and backward,
To and fro, a double motion.
The valley glitters with millions of wind-
Turned leaves bright in the sun: a bird
Upon a tree sings the colors, a voice
Of the grass and wild flower, words
Of the green leaf: it sings their slender tones.⁵⁶⁸

⁵⁶⁶Plato; *Timaeus*.

⁵⁶⁷Plato; *Timaeus*. Jefferies. Crane. Muir, John.

⁵⁶⁸Jefferies. Grey, Zane.

ILLUMINATION 12

Light that makes things seen, makes some things invisible, were it not for darknesse and the shadow of the earth, the noblest part of the Creation had remained unseen, and the Stars in heaven as invisible as on the fourth day, when they were created above the Horizon, with the Sun, or there was not an eye to behold them.⁵⁶⁹

The sun of that earth, which is to us a star, appears there flaming, in size almost a fourth part of our sun.⁵⁷⁰

Behold, the heavens and the earth are; they proclaim that they were created; for they change and vary.⁵⁷¹

Or, directing your open eyes towards yonder part of the heaven, can you avoid seeing the sun?⁵⁷²

The earth beneath had become such a flitting thing of lights and shadows as the clouds had been before.⁵⁷³

⁵⁶⁹Browne; *Garden*.

⁵⁷⁰Swedenborg.

⁵⁷¹Augustine.

⁵⁷²Berkeley; *Three Dialogs*.

⁵⁷³Thoreau.

The cloud was inside lit by the lightning,
Sending off three rays, one in each
Of three directions beyond the black outline
Of the prairie, ruddy lights, like
A fire; until at length the moon, blood-
Red, vastly magnified, rose slowly
Upon the darkness, like an archangel
At the separation of light
And dark: the glory hovers over all.⁵⁷⁴

But borrowed light is but reflected light,
A luminous reverberation
Of light and dark. Though each side of each tree
Turned towards the moon has its share
Of moonlight, the shadows cast by the trees
Number as many as the trees,
And so light and darkness sum to nothing.
Excellent, and more excellent,
Is borrowing and slanting a secret⁵⁷⁵

Light, the sum of a series of changing
Forms, in clouds, plants, and animals,
All in their aspects of horror and beauty,
And good and evil, engraved in
A series of myths, in words of forming
Power: so she treads waxing moon,
That soon will wane, and, drinking borrowed light,
Is filled again, seeming to survey
These dark dominions, her alternate sway.⁵⁷⁶

⁵⁷⁴Bassnett, Thomas; *Outlines of a Mechanical Theory of Storms*.
Parkman; *Oregon Trail*. Emerson; *Essays*. Jefferies.

⁵⁷⁵da Vinci. Stein.

⁵⁷⁶Stein. Ruskin; *Queen of the Air*. Chaucer; *Palamon and Arcite*.

ILLUMINATION 13

**Legions of seminall *Idaea's* lye in their second Chaos and
Orcus of Hippocrates; till putting on the habits of their
forms, they shew themselves upon the stage of the world,
and open dominion of *Jove*.⁵⁷⁷**

She is the newest Birth of Nature's waste inorganic Deep,
which men name Orcus, Chaos, primeval Night; and knows
one law, that of self-preservation.⁵⁷⁸

It is not chaos or death—it is form, union, plan—it is eternal
life—it is Happiness.⁵⁷⁹

The matter out of which the world is formed is not absolutely
void, but retains in the chaos certain germs or traces of the
elements.⁵⁸⁰

The unformed matter of the World, was a God, by the name of
Chaos.⁵⁸¹

⁵⁷⁷Browne; *Garden*.

⁵⁷⁸Carlyle; *The French Revolution*.

⁵⁷⁹Whitman.

⁵⁸⁰Plato; *Timaeus*.

⁵⁸¹Hobbes.

Confronted with so vast a multitude
Of constant changes, and bidden
To find order there, if he can, compelled
Rather by that imperious
Need to seek unity in variety,
And find some order in chaos,
No wonder he thought there surely must be
A single universal order
In the whole of perplexing phenomena,⁵⁸²

Notwithstanding that all things be made not
Of one substance, but out of one
No-thing antecedent to its being
Qualified by any one form,
From the darkness upon a spiritless
Matter, before it underwent
Any restraint of its unformed fluidness,
Or received any light from wisdom
Or place within all things unmade and made.⁵⁸³

This cosmogony he gathered together
From torn shreds of scattered fragments,
Taking from Pythagorus a spherical
System of the world, surrounded
By a circle of pure light, the circle
Of the Milky Way; and, ending
With his pipe's last ember, pressed his forehead
Against mine, and blew out the light,
And in the dark we dreamed a world of light.⁵⁸⁴

⁵⁸²Muir, M.M.

⁵⁸³Augustine.

⁵⁸⁴Cicero. Melville.

ILLUMINATION 14

**The Huntsmen are up in *America*, and they are already
past their first sleep in *Persia*.**⁵⁸⁵

All these are deities of tempest and the mountains—Wild
Huntsmen in the Raging Host.⁵⁸⁶

The creation of a thousand forests is in one acorn, and Egypt,
Greece, Rome, Gaul, Britain, America, lie folded already in
the first man.⁵⁸⁷

Th' eternal snows appear already past,
And the first clouds and mountains seem the last,
But those attain'd, we tremble to survey
The growing labours of the lengthen'd way.⁵⁸⁸

Huck was already upon his watch when the ferryboat's lights
went glinting past the wharf.⁵⁸⁹

⁵⁸⁵Browne; *Garden*.

⁵⁸⁶Mackenzie.

⁵⁸⁷Emerson; *Essays*.

⁵⁸⁸Priestley.

⁵⁸⁹Twain, Mark; *The Adventures of Tom Sawyer*.

And Joseph went to bury his father:
And with him went all the servants
Of Pharaoh, and the elders of the land
Of Egypt, and all of his house:
Like all things, a thing done in time, done as
The measure of motion, one arc
Of motion from past to present to future,
As when particles first cause small
Clouds to form, then catch the one on other,⁵⁹⁰

Then grow together by their conjoining,
Born by the wind along until
Collects the tempest's fury, the sky one
Dark cloud riven by lightning flashes.
Whirlwind inexorable and constant!
Wind raised by a plumed storm demon,
Corpse-swallower sitting at the end of
Heaven in eagle form: from his
Wings comes the wind which fares over us all!⁵⁹¹

With a bold and well trained horse a hunter
May ride so close to the buffalo
That he may touch them with his hand, reach out
And touch the singing of the wind
In the trees, the swift roar of rustling leaves,
The song swelling to a moaning
Wail, the gathering power of the storm.
The days passed on through storm and calm,
The winds changed, time after time, and the sky.⁵⁹²

⁵⁹⁰*Genesis*. Donne. Lucretius.

⁵⁹¹Lucretius. da Vinci. Parkman; *Oregon Trail*. Mackenzie.

⁵⁹²Parkman; *Oregon Trail*. Grey, Zane. Tagore; *Creative Unity*.

ILLUMINATION 15

**To keep our eyes open longer were but to act our
Antipodes.**⁵⁹³

O moon do not keep her from me any longer.⁵⁹⁴

I keep my eyes open when I go about the world.⁵⁹⁵

So long as a man's eyes are open in the light, the act of seeing
is involuntary; that is, he cannot then help mechanically seeing
whatever objects are before him.⁵⁹⁶

I opened my eyes; the morning was beginning.⁵⁹⁷

⁵⁹³Browne; *Garden*.

⁵⁹⁴Whitman.

⁵⁹⁵Henry, O.; Loewenstein, Joseph E.; *Heart of the West*.

⁵⁹⁶Melville.

⁵⁹⁷Turgenev.

I opened to my beloved; but my beloved
Had withdrawn himself, and was gone:
I sought him, but I could not find him; I
Called him, but he gave me no answer.
Do you think he was concerned for the moon,
Though it was by her that he was
Thrown into that sleep, in order that she
Might kiss him while he was sleeping?
The crescent moon, the evening star, the cry⁵⁹⁸

Of an owl, the shadowy trees, the night
Stole on till the mountains alone
Were light. The sun had sunk below the horizon:
A red border of light still marked
Its track behind the mountains of Syria;
The moon was rising in the east
Over the gray plains of the Euphrates;
The herdsmen had hobbled their camels.
A profound silence rested on the desert;⁵⁹⁹

Only the solemn song of the night bird
Was heard at distant intervals.
I shut not my eyes, I close not my ears,
I do not mortify my body;
I see with eyes open and smile, and behold
His beauty everywhere: I utter
His name, and whatever I see, it reminds
Me of him; whatever I do
Or say or sing, becomes this evening office.⁶⁰⁰

⁵⁹⁸*Song of Songs*. Cicero. Jefferies.

⁵⁹⁹Jefferies. Volney.

⁶⁰⁰Volney. Kabir.

*Go little book, go little my lament,
Search out some considerable garden,
Filled with comfrey, pennywort, lemon thyme,
And other such simples as are needful
To our distempers' and disfunctions' ease.*

*Seek, if you can, a garden like the world,
Its beds arranged in circles and right lines,
Its herbs orbiting a weightier center,
A plinth of stone, perhaps, like the axle
Of the garden, like our works' true anchor.*

*Last, pray the gardener tender you shelter
Comfortable, not for you, but for him,
That this our garden, Thomas, may live
Amid the order and motion he shapes,
As his still eyes mirror the turning world.*

Works Consumed

Abbott, Lyman; Carman, Bliss; *The World's Best Poetry, Volume 3: Sorrow and Consolation.*

Adams, H. S.; *Making A Rock Garden.*

Aikman, Charles Morton; *Manures and the principles of manuring.*

Allen, Grant; *Falling in Love; With Other Essays on More Exact Branches of Science.*

Anonymous; *Fishes, Flowers, and Fire as Elements and Deities in the Phallic Faiths and Worship of the Ancient Religions of Greece, Babylon,.*

Apgar, A. C.; *Trees of the Northern United States.*

Apollonius, Rhodius; Seaton, R. C.; *The Argonautica.*

Aristotle; Edghill, E. M.; *The Categories.*

Arnold, Edwin Lester Linden; *Gulliver of Mars.*

Augustine; Pusey, E. B.; *The Confessions of St. Augustine.*

Austen, Jane; *Pride and Prejudice.*

Babbage, Charles; *On the Economy of Machinery and Manufactures.*

Bacon, Francis; *The Essays of Francis Bacon.*

Bagehot, Walter; *Physics and Politics.*

Barker, Thomas, fl. 1651; *The Art of Angling.*

Bassnett, Thomas; *Outlines of a Mechanical Theory of Storms.*

Bastiat, Frederic; *Essays on Political Economy.*

Baudelaire, Charles; Squire, John Collings, Sir; *The Three Hills, and Other Poems.*

Berkeley, George; *A Treatise Concerning the Principles of Human Knowledge.*

—; *Three Dialogues Between Hylas and Philonous in Opposition to Sceptics and Atheists.*

Bion; Moschus; Theocritus; Lang, Andrew; *Theocritus, Bion and Moschus.*

Bodemer, Charles W.; King, Lester S.; *Medical Investigation in Seventeenth Century England.*

Boethius; James, H. R.; *The Consolation of Philosophy.*

Boyle, Robert; *Experiments and Considerations Touching Colours.*

—; *The Sceptical Chymist or Chymico-Physical Doubts & Paradoxes.*

Brewster, David, Sir; *The Martyrs of Science, or, The lives of Galileo, Tycho Brahe, and Kepler.*

Bronte, Charlotte; *Jane Eyre.*

Browne, Thomas, Sir; *Hydriotaphia, urne-buriall, or, a discourse of the sepulchrall urnes lately found in Norfolk.*

—; *Pseudodoxia epidemica.*

—; *Religio medici.*

—; *The garden of Cyrus, or the quincunciall, lozenge, or net-work plantations of the ancients, artificially, naturally, mystically considered.*

Bulfinch, Thomas; *Bulfinch's Mythology.*

Bunyan, John; *The Pilgrim's Progress.*

Burnett, Frances Hodgson; *The Secret Garden.*

Butler, Samuel; *Evolution, Old & New.*

—; *Unconscious Memory.*

Byron, George; *Childe Harold's Pilgrimage.*

Carlyle, Thomas; *Sartor Resartus.*

—; *The French Revolution.*

Carroll, Lewis; *Alice's Adventures in Wonderland.*

Cato; Varro;; *Roman Farm Management.*

Chaucer, Geoffrey; Dryden, John; *Dryden's Palamon and Arcite.*

Churchill, Winston; *The River War: An Account of the Reconquest of the Sudan.*

Cicero, Marcus Tullius; Yonge, Charles Duke; *The Academic Questions, Treatise De Finibus, and Tusculan Disputations.*

Clark, William; Lewis, Meriwether; Jefferson, Thomas; Allen, Paul; *History of the Expedition under the Command of Captains Lewis and Clark, Vol. I.*

Coleridge, Samuel Taylor; *Biographia Literaria*.
Confucius; *The Sayings Of Confucius*.
Conrad, Joseph; *Heart of Darkness*.
Cooper, James Fenimore; *The Last of the Mohicans*.
Cowper, William; *The Task, and Other Poems*.
Crane, Stephen; *The Red Badge of Courage*.
Dante Alighieri; Longfellow, Henry Wadsworth; *Divine Comedy*.
Darwin, Charles; Darwin, Francis, Sir; *The Power of Movement in Plants*.
Darwin, Charles; *The Origin of Species*.
Darwin, Erasmus; *The Botanic Garden*.
Descartes, Rene; *A Discourse of a Method for the Well Guiding of Reason and the Discovery of Truth in the Sciences*.
Dickinson, Emily; *Poems*.
Donne, John; *Devotions Upon Emergent Occasions Together with Death's Duel*.
Douglass, Frederick; *Narrative of the Life of Frederick Douglass*.
Drayton, Michael; Griffin, Bartholomew; Smith, William, fl. 1596; Crow, Martha Foote; *Elizabethan Sonnet Cycles: Idea, Fidesa and Chloris*.
Dryden, John; *Discourses on Satire and on Epic Poetry*.
Emerson, Ralph Waldo; *Essays First Series*.
——; *Nature*.
Epictetus; Long, George; *A Selection from the Discourses of Epictetus with the Encheiridion*.
Erasmus, Desiderius; Holbein, Hans; *In Praise of Folly Illustrated with Many Curious Cuts*.
Erasmus, Desiderius; Wilson, John; *The Praise of Folly*.
Evelyn, John; Nisbet, John; *Sylva, Vol. 1 (of 2) Or A Discourse of Forest Trees*.
Evelyn, John; *Acetaria: A Discourse of Sallets*.

Ewald, Carl; Reynolds, Warwick; Teixeira de Mattos, Alexander; *The Pond*.
Fletcher, Giles; Lodge, Thomas; Crow, Martha Foote; *Elizabethan Sonnet Cycles Phillis - Licia*.
Foxe, John; *Foxe's Book of Martyrs*.
Freud, Sigmund; Hall, G. Stanley; *A General Introduction to Psychoanalysis*.
Gaudapurnanandacakravarti; Cowell, Edward B.; *The Tattva-Muktavali*.
Gray, Thomas; Carruthers, Robert; Rolfe, W. J.; *Select Poems of Thomas Gray*.
Grey, Zane; *Riders of the Purple Sage*.
Hakluyt, Richard; *The Principal Navigations*.
Hall, Jennie; *Buried Cities: Pompeii, Olympia, Mycenae*.
Hampson, P.; *The Romance of Mathematics*.
Hart, Michael; *A Brief History of the Internet*.
Hawthorne, Nathaniel; *The Blithedale Romance*.
——; *The Scarlet Letter*.
Henry, O.; Loewenstein, Joseph E.; *Heart of the West*.
Hobbes, Thomas; *Leviathan*.
Homer; Butler, Samuel; *The Iliad*.
——; *The Odyssey*.
Hooper, William George; *Aether and Gravitation*.
Hopkins, Gerard Manley; Bridges, Robert; *Poems of Gerard Manley Hopkins*.
Horace; Conington, John; *The Odes and Carmen Saeculare of Horace*.
How, Louis; *James B. Eads*.
Hume, David; Selby-Bigge, L. A., Sir; *An Enquiry Concerning Human Understanding*.
Hume, David; *The History of England*.
Huxley, Thomas Henry; *The Perpetuation of Living Beings*.
Huygens, Christiaan; Thompson, Silvanus P.; *Treatise on Light*.

International Meridian Conference (1884 : Washington, D.C.);
International Conference Held at Washington for the Purpose of Fixing a Prime Meridian and a Universal Day. October, 1884. Protocols of the Proceedings.

Jastrow, Morris; *The Religion of Babylonia and Assyria.*

Jefferies, Richard; *Field and Hedgerow.*

John of Damascus, Saint; *Barlaam and Ioasaph.*

Johnson, Samuel; *Journey to the Western Islands of Scotland.*

Jonson, Ben; Morley, Henry; *Discoveries Made Upon Men and Matter and Some Poems.*

Kabir; Tagore, Rabindranath; *Songs of Kabir.*

Keats, John; *Poems 1817.*

Knox, John; Latimer, Hugh; Welch, John; *The Pulpit Of The Reformation.*

Laozi; Legge, James; *The Tao Teh King, or the Tao and its Characteristics.*

Latimer, Hugh; Morley, Henry; *Sermons on the Card.*

Layard, Austen H.; *Discoveries among the Ruins of Nineveh and Babylon.*

Leonardo da Vinci; Richter, Jean Paul; *The Notebooks of Leonardo Da Vinci Complete.*

Levy, Steven; *Hackers, Heroes of the Computer Revolution.*

Lewis, C. S.; *Spirits in bondage; a cycle of lyrics.*

Locke, John; *An Essay Concerning Humane Understanding.*

Locke, John; *An Essay Concerning Humane Understanding.*

Lowell, James Russell; *Among My Books. Second Series.*

Lucretius Carus, Titus; Leonard, William Ellery; *On the Nature of Things.*

Luther, Martin; Graebner, Theodore; *Commentary on the Epistle to the Galatians.*

MacCulloch, J. A.; *The Religion of the Ancient Celts.*

Machiavelli, Niccol; Thomson, Ninian Hill; *Discourses on the First Decade of Titus Livius.*

Mackenzie, Donald A.; *Myths of Babylonia and Assyria.*

Mandeville, John, Sir; *The Travels of Sir John Mandeville.*

Marcus Aurelius, Emperor of Rome; *Meditations.*

Marlowe, Christopher; Dyce, Alexander; *The Tragical History of Doctor Faustus.*

Marquis, Don; *Dreams and Dust.*

Masters, Maxwell T.; *Vegetable Teratology.*

Mather, Cotton; Mather, Increase; *The Wonders of the Invisible World.*

Maxwell, James Clerk; *Five of Maxwell's Papers.*

Melville, Herman; *Moby Dick, or, the whale.*

Mercer, John Edward; *Nature Mysticism.*

Milton, John; *Paradise Lost.*

Muir, John; *The Yosemite.*

Muir, M. M. Pattison; *The Story of Alchemy and the Beginnings of Chemistry.*

Muller, F. Max; *Dhammapada.*

Newton, Isaac, Sir; *Observations upon the Prophecies of Daniel, and the Apocalypse of St. John.*

—; *Opticks or, a Treatise of the Reflections, Refractions, Inflections, and Colours of Light.*

—; *The Chronology of Ancient Kingdoms.*

Nicholls, H. G.; *Iron Making in the Olden Times.*

Nicholson, Henry Alleyne; *The Ancient Life History of the Earth.*

Nietzsche, Friedrich Wilhelm; *Human, All Too Human.*

Nietzsche, Friedrich Wilhelm; *Thus Spake Zarathustra.*

Olcott, William Tyler; *A Field Book of the Stars.*

Ovid; Riley, Henry T.; *The Metamorphoses of Ovid I-VII.*

—; *The Metamorphoses of Ovid VIII-XV.*

Parkman, Francis; *Montcalm and Wolfe.*

—; *The Oregon Trail.*

Pinchot, Gifford; *The Training of a Forester.*

Plato; Jowett, Benjamin; *Phaedo.*

- ; *Timaeus*.
- Pope, Alexander; *The Rape of the Lock and Other Poems*.
- Priestley, Joseph; *Experiments and Observations on Different Kinds of Air*.
- Rabelais, Francois; Dor, Gustave; Motteux, Peter Anthony; Urquhart, Thomas, Sir; *Gargantua and Pantagruel*.
- Radcliffe, Ann Ward; *The Mysteries of Udolpho*.
- Raymond, Ethel T.; *Tecumseh*.
- Ruppelt, Edward J.; *The Report on Unidentified Flying Objects*.
- Ruskin, John; *Aratra Pentelici, Seven Lectures on the Elements of Sculpture*.
- Ruskin, John; *The Poetry of Architecture*.
- ; *The Queen of the Air*.
- Schiller, Friedrich; *Aesthetical Essays*.
- Semple, Ellen Churchill; *Influences of Geographic Environment On the Basis of Ratzel's System of Anthro-Geography*.
- Shakespeare, William; *A Midsummer Night's Dream*.
- ; *The Tempest*.
- ; *The Winter's Tale*.
- ; *Twelfth Night*.
- Shinran; Beck, L. Adams; Yamabe, S.; *Buddhist Psalms*.
- Sinclair, Upton; *The Jungle*.
- Slater, John; Smith, T. Roger; *Architecture Classic and Early Christian*.
- Smith, Adam; *An Inquiry into the Nature and Causes of the Wealth of Nations*.
- Steele, James W.; *Steam, Steel and Electricity*.
- Stein, Gertrude; *Tender Buttons*.
- Sterne, Laurence; *The Life and Opinions of Tristram Shandy, Gentleman*.
- Suetonius; Forester, Thomas; Thomson, Alexander, M.D.; *The Lives of the Twelve Caesars*.
- Sunzi; *The Art of War*.
- Swedenborg, Emanuel; *Earths In Our Solar System*.
- Tagore, Rabindranath; *Creative Unity*.
- ; *Stray Birds*.
- Tasso, Torquato; Fairfax, Edward; *Jerusalem Delivered*.
- Tennyson, Alfred Tennyson, Baron; Schell, Frederic B.; *Beauties of Tennyson*.
- Tesla, Nikola; *Experiments with Alternate Currents of High Potential and High Frequency*.
- Theocritus; Calverley, Charles Stuart; *Theocritus, translated into English Verse*.
- Thompson, Holland; *The Age of Invention*.
- Thoreau, Henry David; *A Week on the Concord and Merrimack Rivers*.
- Turgenev, Ivan Sergeevich; Garnett, Constance; *A Sportsman's Sketches*.
- Twain, Mark; *Life on the Mississippi*.
- ; *The Adventures of Tom Sawyer*.
- Tyndall, John; *Six Lectures on Light*.
- Ullman, Harlan; Wade, James P.; *Shock and Awe Achieving Rapid Dominance*.
- United States. Army. Corps of Engineers. Manhattan District; *The Atomic Bombings of Hiroshima and Nagasaki*.
- Vincent, W. T.; *In Search of Gravestones Old and Curious*.
- Virgil; Dryden, John; *The Aeneid English*.
- Virgil; *The Eclogues*.
- ; *The Georgics*.
- Vitruvius Pollio; *The Ten Books on Architecture*.
- Volney, C.-F.; *The Ruins, or, Meditation on the Revolutions of Empires and the Law of Nature*.
- Walton, Izaak; *The Compleat Angler*.
- Whitman, Walt; *Leaves of Grass*.
- Wilkins, John; *The Discovery of a World in the Moone*.
- Wister, Owen; *The Virginian, a Horseman of the Plains*.

Wordsworth, William; *Poems in Two Volumes, Volume 1.*

—; *Poems in Two Volumes, Volume 2.*

Worthington, A. M.; *The Splash of a Drop.*

Genesis.

Psalms.

Song of Songs.