



### TO CORRESPONDENTS.

MISCELLANEA No. 2, shall appear in the next number of the Repository.

A communication on *Botany*, shall also appear.

The poetical translation of the "*Vorva*," was received too late for this number, but shall appear in the next.

Lines addressed to F—— shall appear, if the author will allow a trifling correction.

THE  
RHODE-ISLAND  
LITERARY REPOSITORY.

---

---

New to the eye, and shifting every hour.

ARMSTRONG.

---

---

VOL. I.

OCTOBER—1814.

NO. VII.

---

---

**BIOGRAPHY OF BENJAMIN WEST, L. L. D. A. A. S.**

*Professor of Mathematicks, Astronomy and Natural Philosophy,  
in Rhode-Island College—and Fellow of the Philosophical So-  
ciety of Philadelphia, &c.*

**WHETHER** literary excellence springs from a love of fame, or the charms of science, is of little consequence to those who partake of the waters that flow from these fountains. Either case imposes a sacred obligation upon the living to arrest from oblivion the names of those venerable sages who have preceded us; and to exhibit their bright examples, in order to accelerate the progress of science, and secure the happiness of man. Such, generally, ought to be the object of literary biography. The abstract duty of cultivating our talents for the good of society is not itself of sufficient strength, when unconnected with the passion of fame and the attractions of letters, to rouse the faculties from the ease of indolence, and urge them to unaccustomed exertions in the race of glory. Few act from this motive alone. Our Creator has therefore wisely connected the love of genuine fame with the attributes of virtue; and thus, by incorporating this feeling with the final causes of our existence, has rendered this passion as natural to a refined understanding, as the hopes of immortality. Nor is the man of science ignorant of the probable degree of applause which future times will bestow upon his

character. By an impartial calculation on the merits of his labours, and a wise observation of the principles and history of human nature, he is enabled to vaticinate philosophically, respecting the rank that he shall hereafter hold amongst distinguished men. Thus, by becoming the judge of his own qualities, man becomes the prophet of his own future greatness. The Philosopher, by this foresight, is less solicitous for the applause of his cotemporaries than that of posterity. He is encouraged, by this prospect, to sit in "patient thought," till the time arrives, of evolving the mysteries of science, or the hidden laws of nature; and although envy and adversity may hasten his steps to the grave, he knows that what he has discovered, has been, is, and will be, eternal truth; and as such must be acknowledged by posterity as long as the annals of science descend. Thus, however difficult an impartial decision may be in other departments of knowledge, where a reputation is to be established on a variety of taste; to a mathematician it is comparatively easy. But opposed to this certain assurance of fame, which he sees like the promised land in prospect, nature has fixed immoveable, and almost insurmountable obstructions. In conquering these difficulties, the mathematician has often to feel his way alone. He enters the interminable empire of mathematicks, without a companion of his victory, or one who can witness his defeats. If he fails in his attack upon some celebrated fortress, he knows, however, that his defeat was not to be attributed to its being impregnable, but to his own deficiency in the mode of attack. If he have courage to renew the charge, he will find that the victory was won, not so much by the vigour of the onset, as by the art with which it was conducted. But when the domains of science are subdued, the power which reduced them to subjection has performed but half its labour. A still more arduous task remains to cultivate its soil, and to render its substratum prolific. Here the productions of the proprietor mark the degree of his genius, with which he rears the tender perennial plants of science, and adorns his bower with all the verdure of the Muses.

To estimate the character of a mathematician, therefore, we must attend both to the extent of his acquisitions, and to the

results which flow from them. It frequently happens, however, as in the present instance, that we can form no just conception of the former, but by viewing them through the medium of the latter. Hence, if accidental circumstances in life have been unfavourable to the development, and practical application of great scientific acquisitions, we are deprived of any resource on which we can found a just estimation of his merit, or measure the extent of his genius.

The difficulties, therefore, that attend the biography of a man of science are such, as ought to deter the arrogance of presumption; and claim indulgence even for the eulogies of a Bailly. Who but a philosopher can do justice to the merits of a philosopher, or can accurately delineate his character? To portray the genius of a mathematician requires a pencil as accurate in designing as the geometry of the original. But mathematicians of the first order are rare as the comets, whose courses they attempt to follow. It is, therefore, no enviable task for subordinate talents to undertake the delineation of superior excellence; and instead of a caricature, to embody its perfections in tangible forms, to impress the mind with the reality of its virtues.

It is under these impressions, that we undertake to render a feeble tribute of literary justice to the memory of a philosopher, who has done honour to his country; and whom the sages of his country have admitted as worthy of their friendship; and as a distinguished companion of their labours.

Dr. Benjamin West, was born in Rehoboth, Massachusetts, in March, 1730. His father's name was John West: and both his parents were members of the Baptist society in that town. By the simplicity and piety of their parental regard they established, in their son, an early foundation for correct principles and habits of reflection. As his father was a farmer, his youth was spent in those rural exercises which give health and vigour to the body, and of course increase the native energies of the mind. In such a scene of innocence and rural retirement, where the arts of deception and the vices of the world seldom pollute the fountain of infant genius, the beauties of nature often fix the attention, and kindle the spark of philosophick curiosity, which excites to

inquiry and leads to science. In such a situation, unfavourable as it must have been, to his early progress, the mind of West began to expand. That intellect which nature had formed to survey the spheres, must early have contrasted the humble labours of the field with the sublimer pleasures of astronomical inquiries. Hence his neglect of business became notorious; other thoughts and other objects had rivetted his attention. But without the advantages of education, without books, or literary society, the brightest talents can do little more than gaze upon the beauties of the skies, the verdure of the fields, or admire the grandeur of the tempest. To an ordinary and uncultivated mind, creation presents "a mass of things, but nothing distinctly." But in the eye of genius, there is a spirit of intuition, that sees without instruction more than others discover with it. In a chaos, it sees the possibility of a principle of order, and anticipates, in "*a discord, the lane of harmony, not yet understood.*" To this prophetic taste of order, connected with a natural sensibility to the beauties of nature, we may perhaps refer those qualities of genius, which are essential to the mathematician and the physical inquirer. These qualities of mind, though not the only ones, are the most essential to the successful study of mathematicks and philosophy. These sciences, in which the mind is chiefly employed in tracing the relations of figures and magnitudes, require an original perception of order, harmony and proportion: and without this quality of mind they cannot be successfully cultivated. When nature, therefore, bestows upon man, this foretaste of order, and a power of distinguishing proportions and relations, she does her office in forming the essentials of a mathematician. If, at the same time, she endows his capacity with sensibility to the beauties of the material world, she has done all that can be done in forming a philosophick genius. The beauties of "*The full blowing Ceres*" have led many to the study of botany: the trail of a fire-fly in a fine summer evening, the industrious habits of the bee, or the useful services of some species of quadrupeds, may have induced others to investigate the laws of animal economy: And why may not an eclipse of the sun, a comet, or an earthquake, attract the attention of the mathematician to physical pursuits? The effect of beautiful and in-

presenting material objects upon the mind of a philosopher, is to rouse his attention to their qualities for the purposes of investigation. When nature, therefore, has given to an original sagacity, a power to be moved by beauty, novelty or wonder, she has done what she intended in forming the philosophick character: she then leaves it to the cultivation of art to bring it to perfection.

This hasty theory of a philosophical genius, may seem to need some apology. We were led to these remarks, from the want of a personal acquaintance with Doctor West. It is hoped, therefore, indulgence will be granted, for stating some of those qualities of mind which distinguish, in common, all men of science: if he had any peculiarities of thinking different from the ordinary class of literary characters, it is a subject, on which we have not received sufficient information to communicate.

Believing then, that such were the original qualities of his mind, we will attempt to trace its progress, as far as the few lights which have been collected will admit.

Doctor West was a self-taught genius. From the testimony of his friends, who have frequently heard him make the remark, we state that all the advantages of education, he ever received in a school, was obtained in three months. He was therefore obliged to rely, upon his own intellectual resources, for all the progress he made in knowledge. This, by giving confidence to the mind, may sometimes have a salutary effect. Denied access to books, and all means of information, the energies of his mind supplied what circumstances prohibited; and found a solution of those difficulties which he might have obtained more readily from the elements of science. We will hazard the remark, that it is to this circumstance, the want of books, that his surprising readiness at calculation is in some degree to be attributed. Although this may at first appear paradoxical, it is however certain, that few men exceeded him in mental calculations;—by this we understand a process of mathematical reasoning, without diagrams or figures, and depending chiefly on the memory. Of this Doctor Wallis is a celebrated example. It is known that, by long habit, we acquire a rapidity in our intellectual processes, not only in mathematicks, but in other sciences, which reaches as by

a glance of intuition, the point of research, while we in vain endeavour to retrace the steps which led us to the result. This habit Doctor West obtained, by a long and early contemplation on the properties of figures, before he had perused the Masters of arithmetical science. These promising talents of young West did not pass unnoticed by men, who knew how to appreciate the efforts of his genius. Amongst his friends, who lent him books, and assisted his inquiries, were Messrs. Usher, Burt and Parsons, of Bristol. Capt. Woodbury, who taught Navigation in that town, also offered to instruct him in that art, without any expense; which kind regard was not neglected by Doctor West. Thus closed all the instruction he ever received from others; and from this inauspicious beginning, he had to urge his way through the difficulties of fortune, to distinction and fame.

In the year 1728, Bishop Berkely, the celebrated Philosopher of Cloyne, arrived at Rhode-Island from Bermuda, where he had in vain endeavoured to establish an university, and distributed his books among the clergy. From these works, Doctor West commenced his acquaintance with the Philosophy of Newton, by perusing the commentaries of his successors. As his father had now removed from his farm in Rehoboth, to another in Bristol, he pursued his studies with intensity, alternately from the labours of the field to the diagrams of geometry, and algebraical formulae. He bent his whole mind to circumnavigate the sphere of astronomick science, he laid his course, pursued with unwearied industry this noble object, and obtained his purpose.

In 1753, and in the 23d year of his age, he married Miss Elizabeth Smith, the daughter of Mr. Benjamin Smith of Bristol. From this connection, he had eight children, of which three daughters, and one son, only, at present, survive. She was a lady, pious and exemplary in her conduct, and esteemed by her acquaintance. As she was a member of the Presbyterian church, under the care of Dr. Hitchcock in Providence, Dr. West usually, till age and infirmity prevented him, attended the same service with her. In the year 1810, after fifty-three years of conjugal felicity, she left this world, "for more inviting regions of undisturbed repose."



Soon after this connection, he removed to Providence, where he opened a school. How long he continued in this employment, is uncertain: we find him, however, a few years after, engaged in the business of a dry goods trader; and having followed this employment for some time, he enlarged his business by adding that of a bookstore. This was the first, we believe, established in Providence. But as his capital in trade was small, and the disastrous times of the revolution approaching, his endeavours to struggle against the tide of fortune proved abortive. From the depreciation of paper currency, and the stagnation of commerce, by which books could no longer be imported from Europe, he was obliged to retire from commercial business, and seek a support for his numerous family in some more profitable employment. If some of his creditors secured their dues by a legal confiscation; others, who were by that means deprived of their just rights, never uttered a complaint against the integrity and rectitude of Dr. West. Gentlemen in Boston, and elsewhere, who had suffered by him, but feeling for his misfortunes, and knowing the value of his character, generously offered him every assistance in order to enable him to establish himself again in business. He preferred, however, another course of employment. Providence, at that time was considered, from its situation, as tolerably secure from the ravages of war. Accordingly it became a depot for warlike stores, and a workshop for the American army. Doctor West, who ardently embraced the principles of the revolution, engaged in manufacturing clothes for the use of the troops then in service. In this occupation he continued during the war. At the return of peace, he recommenced a publick school in Providence; and was thus employed till 1786, when he was chosen Professor of Mathematicks and Astronomy in the college now called Brown-University.

We have thus far traced his life, because it is unconnected with his scientifick pursuits. The incidents that occurred after he was elected a Professor will form a part of his literary history, and therefore we shall include them in that narrative.

Returning, therefore, to his labours in science, if we do not find in them those brilliant discoveries which have raised other phi-

Joseph to the highest rank of distinction, there will be found materials sufficient to entitle him to the name of a Philosopher, and such an one as is necessary for the honour and happiness of every society. But it would be unfair to judge of the genius of Dr. West from the productions of his pen. These indeed were few. Men whose circumstances have been less circumscribed than his, and whom affluence has enabled to indulge in leisure, may well be judged by the rule of reasoning from the fruit to the tree. But could he have commanded that time, particularly in his youth, which daily necessity wrung from him, we are persuaded that few would have stood higher in the walks of science than he. We have no desire, however, to raise his character above its proper level: knowing that what he has done, not what he was capable of performing, will be his only standard of estimation with posterity.

The first scientific production of Dr. West was an Almanack, calculated in 1762, for the year 1763, and published by Mr. Goddard, who had then just erected the first printing-press in Providence. His Almanacks, calculated for the meridian of this town, were continued till about the year 1793. He also calculated Almanacks for the meridian of Halifax; but when they commenced is uncertain; probably about the year 1769: and except in the revolution, he annually furnished the British province with a prophecy of times and seasons, till 1812, a year before his death. We have placed these scattered events together in order to avoid an unnecessary repetition of the same occurrences. In the following account, a chronological order will be observed as nearly as possible.

While Doctor West was engaged in commercial business, he found leisure sufficient to pursue his favourite science of Astronomy; and no celestial phenomenon, of importance to the world, passed by him unnoticed. He flourished, indeed, in an age of celestial wonders, some of which could not again occur for more than a century. This gave him an opportunity of bringing his talents into action; and the use that he made of them entitles him to a rank among the Astronomers that flourished in the infancy of American literature.

In a letter to Dr. John Winthrop, Esq. of Cambridge, which led to a long and uninterrupted friendship between these two Philosophers, he thus addresses him:

Providence, April 10, 1766.

"DEAR SIR,

"For the improvement of science, I now acquaint you, that the last evening, I saw in the West, a comet, which I judged to be about the middle of the sign Taurus; with about 7 degrees North latitude. It set half after 8 o'clock by my watch; and its amplitude was about 29 or 30 degrees. Nothing, Sir, could have induced me to this freedom of writing to you, but the love I have for the sciences; and I flatter myself that you will, on that account, the more readily overlook it.-----"

I am, Sir, yours,

BENJAMIN WEST.

Having at this period of his life treasured up a store of mathematical learning, he endeavoured to render it useful to his country. He was now in the 36th year of his age, when his natural powers, aided by his acquirements, enabled him to gratify the activity of his genius, and the eagerness of a boundless curiosity. His observations on the comet of this year introduced him to the notice of several men of science: but the Transit of Venus, that happened on the 3d of June, 1769, and the Transit of Mercury in the November following, gave him a farther opportunity of establishing his character, as a mathematician and an Astronomer. The Transit of Venus was observed by Dr. West and Joseph Brown, Esq. of Providence; a gentleman distinguished for his skill in mechanics and experimental philosophy. In his account of this transit, which was published, and sent to Dr. Merton, Secretary of the Royal Society of London, he thus describes their feelings, after their observatory was prepared, and all things in readiness:

"The morning of the third of June was ushered in with that serenity which the business of the day required: all was calm, and not a cloud to be seen. The gentlemen concerned in the business convened very early at the place of observation, to see that every thing was in order; and at the sight of such a morning, the gladness of their hearts was visibly expressed by a pleasant aspect upon their countenances."

During the observation of this rare phenomenon, which could not happen again in 105 years, he found the latitude of Providence in  $41^{\circ} 50' 41''$ —and the longitude (taking Dr. Franklin's

geodesic measurement between Boston and Providence for his guide, which makes the latter place  $16'$  West of Cambridge) he found to be  $71^{\circ} 16'$  West of the Royal Observatory of Greenwich. The same transit was also observed by Professor Winthrop, at Cambridge, at Newport, by Rev. Ezra Stiles; and at Philadelphia, by Dr. John Ewing. On this subject, a great number of letters passed between these gentlemen and Dr. West, none of which would be either entertaining, or of any consequence at the present time.

In July 1770, another comet made its appearance, which farther engaged the attention of Dr. West, with other Astronomers; and probably gave rise to Professor Winthrop's and Mr. Oliver's theories of cometic tails, which we shall have occasion to notice in the sequel.

In 1770, July 18, the University of Cambridge conferred upon him the honorary degree of Master of Arts. From the following letter on this subject, we collect the labours that occupied the attention of these two astronomers at this period.

Cambridge, July 19, 1770.

"SIR—I have the pleasure to acquaint you that the government of this college were pleased, yesterday, to confer upon you the Honorary degree of Master of Arts; upon which I sincerely congratulate you. *I acknowledge the receipt of your favour, and shall be glad to compare any observations of the satellites.*"

Yours, &c.

JOHN WINTHROP.

The corporation of Rhode-Island college had but recently obtained their charter; and from a letter to the Rev. Dr. Stiles at Newport, we infer that one or both of them had formed some expectations of a professorship. As the letter was a confidential one, we do not think ourselves authorized to make an extract to support our assertion. At this time, the intellectual powers of Mr. West were perhaps the most vigorous and active, of any period of his life. His discovery of the Theorems for the extraction of the roots of the odd powers have been justly appreciated, and further entitled him to the name of a mathematician. A letter written to Mr. Joseph Howe of Boston, May 6, 1773, intimates that he had made the discovery previous to this time. He did not, however, make them publick, otherwise than by instruction to his pupils, till he communicated them to Mr. Caleb Gannett,

Esq. Secretary of the American Academy, in 1781, when they were published in the 1st vol. of their transactions, in 1783.

This paper on the extraction of roots was respectfully noticed by the European Magazine, in a review of the Memoirs of the Academy. For the gratification of the curious, and also for their general utility, we shall take the freedom of inserting these theorems, in their algebraical form, from which the rule may easily be made.

Let  $a$  = resolvend,  $r$  = root of the first left hand period; and  $e$  = the correction, or root of the remaining periods.

Theorem 1. For the cube root.  $\sqrt[3]{r+c} = \frac{r}{2} + \sqrt{\frac{4a - r^3}{12r}}$

Theor. 2. For the sursolid.  $\sqrt[4]{r+c} = \frac{3}{4}r + \sqrt{\frac{8a - 3r^4}{80rs}}$

Theor. 3. For the 2d sursolid.  $\sqrt[5]{r+c} = \frac{5}{6}r + \sqrt{\frac{12a - 5r^5}{252r^5}}$

About this time, as Mr. Oliver and Dr. West were riding together in a chaise to Pawtuxet, the former proposed a physical problem for the latter to resolve; and because it caused some difference of opinion between these gentlemen and Professor Winthrop, for nearly two years, we hope to be excused for introducing it. It was as follows:

“ Suppose a very strong hollow sphere of copper to be filled  
 “ with air, and be placed in a glass receiver from which the air  
 “ is exhausted; and suppose that the constituent particles of air  
 “ be mutually repellent in any inverse ratio of their distances,  
 “ will the air contained in the sphere by such exhaustion remain  
 “ equally dense throughout as before; or will it be condensed  
 “ upon and near the concave surface of the sphere decreasing in  
 “ density to the center?” Mr. Oliver, in a letter of June 20, 1772,  
 apprehended “ that some curious disquisitions in Natural Philo-  
 “ sophy, depended upon this point.” Accordingly, as he had received different solutions from Professor Winthrop, and others,

to whom he had proposed it, he desired Dr. West's solution, which is as follows:

"The exhaustion of the air from the receiver will not influence the included air in the sphere, otherwise than to increase its repellent power. But this repellent power of the particles of air will act equally in all directions; for if we suppose the repellent power of the particles of air should be able by any means whatever to increase the density of the air near the side of the sphere, then the repellency of the side of the sphere will be increased in a reciprocal proportion to the distances, and this will throw them back again to the center: for they will act like two equal and contrary forces, and must destroy each other. So that if there be nothing to act on these constituent particles but their own repelling power, or elasticity among themselves, they will be equally dispersed throughout the sphere. But it is well known, by experiments, that exceeding small particles of matter, such as water, light, &c. are greatly attracted by larger bodies. Then as the air is composed of a number of infinitely small particles of matter, we may reasonably conclude they will be attracted by the side of the sphere, and be denser there, than any where else: and it will be increased till the repellent power becomes equal to the attractive."

Dr. West in returning this solution, with Mr. Winthrop's papers on the subject, which Mr. Oliver had lent him, thus writes:

"Mr. Winthrop's ideas on the subject seem to be something like this, viz. "That the repellent force of the middle particle of air, communicates its force to its nearest particle; and that particle acts on its nearest particle towards the sides of the sphere, with its own force, together with the force communicated. And so the force from particle to particle, from the middle one, towards the sides of the sphere is constantly increased, and thereby condensed near the sides of the sphere." After dissenting from this ingenious reasoning, Dr. West concludes;—

"I would say that the air was never brought into so condensed a state, as to have the particles brought into contact with each other; for should that ever be the case, repulsion would then cease, and attraction take place, by the very ideas we

“have of attraction and repulsion. I would rather choose to think that the repellent force of every particle of air terminates on its nearest particle; and every particle is thereby made to keep at an equal distance. “I would not, however, be understood to take any pleasure in raising arguments against so great a man as Mr. Winthrop; but I rather revere him as a friend, a great Philosopher, and a friend of mankind.”

We do not know what use Mr. Oliver proposed to make of this problem; it is probable he might have in view the solution of some phenomena connected with his celebrated theory on the tails of comets. It may also be of service in the mechanical doctrine of the expansion of elastic fluids. In hopes, therefore, that it will not be lost to some future speculator, it has been thought proper to record the opinions of both these gentlemen on the subject.

About this time Mr. Oliver wrote to Dr. West a letter, containing thirteen articles, which gave a periphrastic abridgment of his new theory of the tails of comets. Although it is not our intention to give a particular account of all the scientific correspondence of Doctor West, yet for the sake of science, we hope for little indulgence, that we may record his decisions on this as well as a few other philosophical questions submitted to him.

In order to give our readers a view of the question, we state a short account of Mr. Oliver's theory, which is as follows:

In Sir Isaac Newton's Principia (B. 1. §2. prop. 10. Prob. 5.) it is demonstrated that “All bodies, which revolve in elliptical orbits round any point, as an attracting center, said point not being in the focus of either of these ellipses, but in the common center of all, revolve around the same in equal times, however great or small the excentricities of their orbits, or their distances from that center may be; the centripetal power urging them towards that center being directly proportional to their distances from it.”

The object of Mr. Oliver's investigations was to find the law of attraction by which the tail of a comet was governed. The nucleus was governed by the law of the decrease reciprocally as the squares of the distances, and therefore, its orbit must be an

ellipsis. But the tail, as appears by observation, always projects nearly opposite the sun, in every part of its orbit; and therefore, every part of the tail, from the nucleus to the farthest extremity, must perform the revolution in the same periodical time with the comet. But as the tail of a comet often extends across several of the planetary spheres, the revolutions of the several parts of the tail, were they governed by the universal law of gravity, which regulates the motions of the primary planets and satellites (viz. that the squares of the periodical times are as the cubes of their distances from the sun), could not always perform their motions around the sun, so as always to preserve that direct opposition to him, which we find they do. But on the contrary, if the parts of the tail possessed a power of gravity increasing directly as their distances from it, then, by the foregoing proposition cited from the Principia, the tail of the nucleus would all revolve in the same time, and constantly preserve a direct opposition to the sun. The question was to investigate the origin of this extraordinary law of gravity, so different from that in all other celestial bodies. To this, Doctor West gave the following solution:

“DEAR SIR—A difficulty may be stated which deserves attention, but which may easily be remedied, viz. If the tail of a comet be no more than its atmosphere, repelled to a great distance by the atmosphere of the sun, it has been asked what hinders it from flying off infinitely? the gravity of its several parts towards the head or nucleus, when at such a great distance from it being utterly insufficient to counteract any such contrary repulsion?

“To this it may be answered, that were there nothing to prevent it but the attraction of the nucleus, the greater part of the tail would doubtless fly off, never to return. But it is to be considered, that as the tail is found nearly in opposition to the sun, so the gravitation of its several parts towards the sun and towards the nucleus, urge them nearly in the same direction: whence, they are retained in their proper sphere, not only by the attraction of the nucleus, which, indeed, can be but very inconsiderable, but by the attraction of the sun’s whole mass: and however great the repellent force of his atmosphere may be,



“ we shall find *that* contrary power still much greater, notwith-  
 “ standing the amazing visible effects of the former exhibited in  
 “ a tail of enormous length. That this is really the case demon-  
 “ stratively follows from the motions of the remoter parts of the  
 “ tail: for as they, as well as their head, move round the sun in  
 “ curves, which are concave towards the sun, as is certain from  
 “ observation, they, as well as the head, are urged by centripetal  
 “ forces towards the sun’s center. Therefore, however great, the  
 “ repulsion of the sun’s atmosphere may be, the power of gravity  
 “ evidently predominates: the whole force, which regulates the  
 “ motions of the distant parts of the tail around the sun being  
 “ only the difference of these two contrary forces. The motion  
 “ of the head, on the contrary, is governed by the whole force  
 “ of its gravitation towards the sun unimpaired by the contrary  
 “ repulsion of its atmosphere. Upon the whole, then, we may  
 “ conclude that both the head, and the several parts of the tail;  
 “ move nearly in the same time round the sun, but in paths dif-  
 “ fering in curvature, as the centripetal power which urges them  
 “ towards the sun’s center differ in strength, but all partaking of  
 “ the same projectile motion, viz. that of the comet in its orbit.  
 “ The path of the head is undoubtedly a conick section, probably  
 “ an ellipsis; the orbits of the several parts of the tail must sur-  
 “ round this, and each other, according to their distances from  
 “ the head. The distance of the outermost from the innermost,  
 “ in which the tail moves is, when measured in a line, connect-  
 “ ing the center of the sun and comet, usually the length of the  
 “ tail. But as the curves through which the several parts of the  
 “ tail move, result from the actions of two contrary forces,  
 “ must be distinct in species from those which arise from the  
 “ power of gravity, and require a particular investigation.”

B. W.

The idea suggested in this communication is so ingenious, that it is highly worthy of an explanation.

On the hypothesis that a comet’s tail is projected by the sun’s atmosphere, we infer that there are two centripetal forces acting on the tail, or on any of its component particles, in one and the same direction, viz. the gravitation of the parts towards the sun

and towards the nucleus, of which the gravitation towards the sun is vastly greater than that towards the nucleus, and decreases much more gradually from the sun than from the comet. Therefore, from the combination of these two forces, arises a force which must decrease much slower than the reciprocals of the squares of the distances from the sun. For the sun's-power cannot differ much in the ordinary length of a comet's tail, while that of the comet may decrease so as to be very small at the farther extremity. If we now suppose the density of the sun's atmosphere to decrease outward, in a ratio, in some measure, corresponding to the decrease of gravity to the nucleus, the greater density of the atmosphere near the nucleus will destroy the greater attraction of these parts of the tail; and so on, outward, till all the effects of attraction to the nucleus be destroyed. There will remain then only the attraction of the parts of the tail towards the sun; for their centrifugal forces, and this power also, which varies inversely as the squares of the distances, may, by the nearer approach of the comet to the sun, be so destroyed by the increasing density of the sun's atmosphere, as to be at last, reduced to the direct ratio of the distances from the sun. And perhaps it is owing to this balance between the centrifugal and centrifugal powers, the attractions to the nucleus, and sun, and the decreasing repulsion of the solar atmosphere, as the comet approaches or leaves its perihelion, that we are to ascribe the different lengths of the tails of comets.

The perihelion of the comet of July, 1770, already mentioned, and which probably gave rise to the foregoing theory, was determined by Dr. Wors from three observations. He also observed Jupiter's satellites the same year, and constructed a new table of them, from the year 1769, to 1810. In short, from this time till 1769, his whole life seems to have been almost a continued course of mathematical and astronomical labours. In his "Miscellaneous Tracts," a repository of his calculations, we find the sun and moon's places, and many eclipses calculated in the years 1778—80—81—82—83—87—80—91—92—93, together with the great variety of astronomical tables, some copied from other authors, a few constructed entirely new, and others extended and improved.

In January 31, 1781, he was unanimously elected a member of the American Academy of Arts and Sciences, and received their diploma.

In 1785, as no system of Arithmetick was then extant in America, properly adapted to the purposes of academical and collegiate instruction, Doctor West contemplated supplying the desideratum. How well qualified he was for the task, every one will judge, who was ever acquainted with his character; but for want of encouragement, he was obliged to desist from the undertaking. About this time, however, he received a letter from Mr. Nicholas Pike, of Newburyport, stating that he had attempted the same, and requesting his criticism, revision, and approbation of it to the publick. Doctor West, in his private letters to Mr. Pike and others, extolled it in high terms: the following is an extract from one of them:

Providence, July 19, 1785.

"In a system of science, I am a friend to working out every proposition, at large, and leaving it to the learner to invent a new method of construction. Upon the whole, Sir, I think your system would have done honour to a Newton: this I speak with the greatest sincerity, and, therefore, it may not be taken for flattery."

Accordingly, Doctor West gave it his cheerful approbation, but his recommendation as it stands in the work, did not appear to Mr. Pike expressed in such terms of unqualified applause as those in his private correspondence. This gave occasion to some letters between them on this subject. That Doctor West was cautious of extravagant encomiums is very true, although he would have hazarded nothing by bestowing them upon Mr. Pike. A certain gentleman, whose name is not known, submitted a mathematical treatise to his inspection. It proved incorrect. In a tender and delicate manner he intreated him "To look over and over his calculations, before he sent them to the press: and after he had corrected them, and made additions, he doubted not, but there might be things found in it which would prove of advantage to posterity."

He now in the beginning of the year 1786, relinquished the publick school in Providence; and the corporation of the university, as appears from their records, on the death of Professor Brown, elected him a Professor of Mathematicks and Astronomy.

This friend and companion of his scientific labours, had been chosen to the department of Experimental Philosophy at the Commencement of 1784, and died Dec. 3, 1785. To succeed him in his duties, Doctor Perez Fobes was elected at the same time with Doctor West. From some cause at present unknown to the writer of these memoirs, Doctor West did not enter upon the duties of his professorship, till the year 1788. In March, 1787, he received an invitation from Mr. Samuel Magan, to accept of the professorship of Mathematicks in the Protestant Episcopal Academy of Philadelphia. The offer was accepted; and leaving his family in Providence, he took a passage from Newport to New-York, on June 6, and arrived in Philadelphia on the 10th. He here applied himself to his duties; and reformed the mode of instruction, which had hitherto been directed by an Irishman whose name was Devin. Instead of beating his pupils with a cudgel, and treating them as culprits, who were incapable of understanding and practising the arts of self-government, he endeavoured to make them sensible that they were gentlemen, whom he should be willing to enlist into his confidence and friendship. The Principal of this Academy was Dr. Andrews. Here he received the attentions of the first literary gentlemen of Philadelphia; and we need not be surprized at any man's expressing a pleasure in numbering among his friends such names as Ewing, Rittenhouse, and Franklin. To an Astronomer, and Philosopher, it was an inestimable blessing.

In his letters written to his wife, it appears that it was his desire to have his family follow him; but they could not be prevailed on to leave Providence. In August, during his vacation, he visited Baltimore, at the New Forest, where his son Joseph, who had lately married the daughter of Lieut. Governour Howard resided. In this visit he felt and enjoyed all the delights that filial affection can bestow. It is one of those few points of view in which we can obtain a glimpse of his domestick character, and discover the qualities and feelings of his heart. When his mind was unbent from the severities of demonstration, he was tender, social and affectionate; and felt as much as any man, the pleasures of existence. The endearments of kindred, and the charms

of society, had attractions sufficient to rouse his mind from its native clime of abstraction; and sometimes, to make him think there were a few things in this world worth living for.

It was in the beginning of this year, that he received an invitation to accept of the Mathematical Professorship in Columbia College, but for some reason or other, he declined. It was, probably, on account of his family, and his previous engagement in Rhode-Island College. During this summer, of 1788, he returned to Providence, after a residence in Philadelphia of little more than a year, and entered on the functions of his Professorship, to which he had been elected in 1786. Concerning his merits in this department of instruction, we can say little more than refer to the living witnesses of his excellence. He had already done enough in science to evince the depth of his acquirements; and he now entered a field where he had an opportunity to display them in their full extent. His friends were not disappointed in their expectations. The only sentiment we have ever heard expressed was, admiration of his talents as a philosophick instructor; esteem and veneration for his character. If he had failings (and who has them not?) they were such as did not arise from a deficiency of knowledge, but from confiding too much in the understandings of his pupils. His mind was always accessible to the ingenuous inquirer, who never departed from him without instruction;—but the student, whom a false pride of affected knowledge, or a despicable fear of disclosing ignorance prevented from asking assistance, did not, like Alcibiades, find in Dr. West a Socrates. His intellect, like Plato's Academy, was approachable only by science, where all ignorant of Geometry were forbidden to enter. Those, who paid their addresses to science, because they loved her, found in him a parent whose consent was granted at the moment of solicitation: but as a wise father would avoid an ostentatious display of the charms and virtues of his daughter, to one under vows of celibacy, he probably seldom endeavoured to obtrude the beauties of science upon those intellects that manifested a distaste. But Doctor West's mathematical and philosophical talents were so varied, and so minute, that they enabled him to explain the abstrusest subjects

in a style perspicuous and familiar to his audience. Experimental Philosophy was not his department: but in whatever related to calculation, his lectures, though destitute of the elegancies of style, and the graces of diction, were marked by originality and depth of thought. But eminent as his merits were, they could not procure for him a competency, without the practice of the strictest economy. With a salary, at first, of only 375 dollars a year, we shall have no very flattering idea of the patronage which sustained the dignity of science in the morning of our university. But thanks to our forefathers, that worth "Could gain a pittance, humble as it was."

In 1790, Doctor West was requested to attend to the classes twice a day, on the subjects attached to his department of instruction. This duty he continued to perform during the remaining period of his professorship.

At the Commencement of 1792, the Government conferred upon him the degree of Doctor of Laws, in consequence of his services to science and to the world. The degree of Doctor of Laws was also conferred on the Rev. Perez Fobes, at the same time. Doctor Fobes one day, in conversation, asked Dr. West if he had ever known the degree of doctor of laws conferred on one who was ignorant of Greek? "Ask Rittenhouse and Franklin," replied Dr. West: for he knew that Professor Fobes piqued himself upon his classical attainments, to which he himself had no pretensions. In these languages, he never aimed further than at a knowledge of the technical terms of science. Of the ancient Greek geometry he was therefore ignorant, but although,

"He did not dig so many fathoms down

"As Bentley dug in Grecian soil, he found

"Truth, ever at the bottom of his shaft."

The French language he was able to read, as appears from the constant use he made of La Lande's Astronomy. But although penury never allowed him to make extensive researches in other departments of knowledge, his acquaintance with the first authors in modern science, appears to have been extensive and profound. He took great pleasure in investigating the principles of operation in the several mechanical arts and trades; and was frequently of essential service in directing the pursuits of those

who applied for information. By the request of Capt. Donnison, he investigated the following curious problem, which, for its practical utility, we shall take the liberty to insert. The problem was, "To find what angle the rudder of a ship should have with the keel, to bring her to stays the quickest possible?" We do not, indeed, profess to know enough of the history of naval science, to assert that this was original; probably it was not: but as it is seldom found in books of science, it will not be useless to preserve it for the sake of navigators and seamen. The angle required was 54 degrees, 44 minutes.

In the October of this year, he was elected a member of the Pennsylvania Society for the Abolition of Slavery. In 1798, in consequence of the death of Doctor Fobes, the two Professorships of Natural and Experimental Philosophy, and Mathematicks and Astronomy were united under one, and denominated the Professorship of Mathematicks and Natural Philosophy. To the duties attached to this department, Doctor West was appointed to officiate, during the succeeding year. This year was the last of his publick services. At the commencement of 1799, he received an official note, in a style similar to the delicate form used in changing an English Minister:

"SIR,

"I do not find your name on the list of his Majesty's ministers for the ensuing year."

The particular reasons which led to his dismissal we must pass over in silence, for reasons obvious to the living, though not dishonourable to the dead. When the partialities of friendship and the motives of interest shall have ceased to operate, then some future biographer may do justice to his character. We therefore, willingly, leave this part of his portrait to be sketched by another pencil.

He now returned to the bosom of his family, in order to pass through the vale of years, in tranquillity and peace to the tomb. But he had lived too long in the world for his character to be forgotten in the retirement of domestick life. The gratitude excited by the remembrance of past instruction, on those great topics which raise the soul to heaven, and lead it to converse with

its Creator, drew after him the regards of his former auditors and pupils. But however little he might stand in need of such consolation, it was a debt of justice due to his character, and which all uninterested persons (if any such there were,) would rejoice to have seen paid.

As one instance of esteem, a young gentleman, who had been his pupil, presented him with a copy of Sir Isaac Newton's *Universal Arithmetick*, with this motto:

“ Render unto God, the things that are God's;—  
“ And unto Cesar, the things that are Cesar's.”

Another author, equally his favourite, and another motto equally as flattering could not, perhaps, be very easily selected. But necessity called for something more substantial than the breath of flattery and applause. Accordingly, at the request of a number of young gentlemen, he opened a school for Navigation, in his own house, soon after the termination of his professional duties. This employment proved more lucrative than his professorship: while, at the same time, he had the honour of bestowing upon his country, some of its ablest navigators and seamen. His method of teaching the lunar observations, was then considered as original: the manuscript which contains them, is a course of instruction in Astronomy and Navigation, and without doubt, its publication would be of service to the world, notwithstanding the many improvements since made in this science.

He had also, a common-place book, which we have before mentioned, which he called his *Miscellaneous Tracts*. This was a repository, in which he inserted whatever curiosities he met with, in his researches, or whatever might be useful to his calculations. Amongst other things, it contains many elegant exercises in Algebra, Geometry, Fluxions, the Maxima and Minima, and problems in Navigation. He also had recorded in it, many of his Astronomical observations; and compiled several, and constructed a few Tables of his own. The tables of Halley, which did not come down late enough for the purposes of his calculations, he extended, some through the eighteenth century, and one or two to 1820. We find in it also, the calculations of



the Transit of Mercury, the calculation of the sun and moon's places, and of eclipses for many years.

In April, 1802, in consequence of his services to the publick, the Postmastership in Providence was conferred upon him; when he relinquished his school for Navigation, and applied himself to the duties of his new station. In this employment he continued a little more than eleven years. In 1810, as we have previously stated, he parted with his wife:—this shock accelerated the disorders and the infirmities of old age, and brought on a gradual decay, which finally terminated his useful life, on the 26th of August, 1813, and in the 83d year of his age.

Some of his last moments were painful from bodily distress: but as the dignity of Philosophy had supported him through the adverse trials of his life, so his trust and hope in the christian faith, enabled him, at its close, to triumph over the last ruins of natural evil; and to enter a new sphere, whose center of attraction is the Sun of Righteousness, giving movement and harmony to the great moral system of Saints and constellated Sages, revolving in the light of love Divine, through the Ecliptick of Glory.

Thus ended the life and services of this Mathematician: a man, who, had he received patronage, proportioned to his merits, would perhaps have rivalled the greatest of his age: but charged with a numerous family, and doomed by his devotion to science, to struggle through life, against the tide of fortune, he retired from the world, with nothing but the applause of mankind for his labours. Unhappily indeed for his character, publick distinction "*came a day too late.*" Nature had given him the genius of Philosophy; but the world made him a farmer, a merchant, and a schoolmaster, for the space of fifty-six years. At this period of life the strongest intellects usually begin to decay; and the brightest imaginations cease to glow with fervour. The time which he ought to have employed in exploring the various fountains of knowledge, was wasted in administering to the calls of necessity; and therefore, the world has lost the full amount which his intellect seemed capable of producing. The fate of philosophick genius seems, often, to have been determined, like manufactured commodities, by the demand in the market. Although

there cannot be too many men, deeply learned in the abstruse Sciences, the state of society requires, perhaps, a less proportion of such characters than of any other class of literary devotees. A few such can supply all the wants of the community, and hence, a superfluity of talent must remain dormant for the want of employment. Few will labour for the pleasures of science, unless they can connect it with views of profit or of character: and therefore, when science is held in contempt none will be found to claim its laurels. But in what period of history has a redundancy of philosophick genius existed? It is rare indeed that such talents appear. Mankind have oftener to deplore the want of them, than to boast of a superabundance. Hence the publick interest as well as the publick duty, requires us to cultivate, patronize and caress such extraordinary intellects with marks of extraordinary favour.

It may truly be said of Doctor West, that he had no enemies, and that he never wanted a friend. But however grateful may be individual beneficence, particularly when bestowed by an unknown hand, its influence is lost to posterity, for it is rarely recorded, and as rarely remembered. Publick approbation bestowed by publick patronage, is the only lasting expression of the inestimable value of virtue; and by this, future times receive instruction, and man becomes the rival of his fellow man in the race of glory. What the world has lost by the early neglect of Doctor West, can never be replaced: what it has gained by his genius will never be forgotten. He was a patriot, a philosopher and a Christian;—he toiled for the good of his species, and lost, in a measure, the result of his labours: he made himself eminent; but it was an eminence that secured him no earthly good; and therefore sympathy holds out, in the pages of biography, his unrequited deserts, in order to render human society vigilant, discriminating and just to its interest; and by its deeds of munificence to rising genius, to secure the scientifick progress and honours of our race.

---

 THE ADELPHIAD. No. CXIII.
 

---

*The cause of the difference of mind at different times and in different Countries.*

MAN stands at the head of animal creation.—He is further distinguished by his Creator, by the powers of speech and reason. With the assistance of these he acquires dominion over all other creatures. The faculty of speech is not only the medium of power, but of pleasure. It is the source of sympathy. It is the bond of union: if we feel joy, we impart its rapture to our fellow beings: if we feel sorrow, its sting is rendered harmless by the accents of friendship. We pour forth our whole soul through the medium of this heaven-born faculty.—With the assistance of reason, we devote our energies to the acquisition of greatness and glory. No obstacles are insurmountable. We explore the bowels of the earth. We mount on eagle wings, direct our course through the heavens, gather wisdom from the comet's flight, and touched with "grace divine," turn from nature, and "search out the deep things" of nature's God.—But let us descend from the contemplation of man so noble, and view him in his various local situations; and discover, if we can, the cause of that difference in his mind or genius, at different times, and in different countries.

That there is a very great difference no one will deny:—but how that difference arises, is, and has been a question, that has involved much learned discussion. Some have supposed that climate is the cause; and when we consider the effect that climate has upon the body, and the intimate connection between body and mind, there appears to be some truth in the supposition. It must be admitted from certain established facts, that climate has a very perceptible effect upon the human frame. It is well known that in warm or mild climates, the tongue (for instance) is much more flexible than in cold latitudes; hence it is that the languages of the North have so many monosyllables, and their

words so clogged with consonants as to make it difficult for foreigners to pronounce them.\* And hence it is, that the French, Italian, or ancient Greek language is so easy and flowing. The nerves of the tongue, in the countries where those languages are, or were spoken, are flexible; of course they speak in more measured accents; and, on account of the many vowels, with a much fuller mouth.

But there are other facts, which more powerfully witness the effect of climate. In warm countries, it is well known, that *puberty* and *manhood* are always advanced or quickened, and that decrepid old age succeeds them much sooner, than in cold ones. In fact, in some hot climates a man at forty is an old man, and a woman at twenty-five or thirty is an old woman. It is also to be remarked, that in warm countries the children are more often born with dark hair; or at least it has been so remarked of the Italians, whereas in frigid climates, they are more usually born with light hair. In warm climates the beard is more flowing, especially in Italy, and actually seems more fitted to the face than in other colder countries;—indeed one traveller observes, “so peculiarly is the climate of Italy adapted to the human frame, that you may pick out many a good Greek philosopher’s head at *Rome* or *Naples*, if you were to let the beard grow; but I defy any man to find one amongst the ultra-montane pilgrims.” Another traveller observes, that “the blood is finer in *Greece* than in any other country whatever, and the nearer you approach to *Greece*, the finer it is.—Thus in Italy you seldom see any of those yawning, gaping, half-formed, half-meaning faces, which give you so much offence in other countries.

The Italian features are generally dignified or sensible; the form of the face is commonly large and determinate, and there is a beautiful consent of parts. Nor is this confined to the higher ranks alone; you meet with it in the lower order of people, especially in the heads of old men, which are inconceivably picturesque, and would not degrade a subject of the highest argu-

---

\* For the truth of this remark, observe some of the Russian names, such as Pskow, Lantz, Pinsk, Vischny, Volishck, Velychi, Louki, Ragutz, &c.

ment if they were introduced into it. Nor is it uncommon at Rome to find models for a Juno among servant maids. But where the beauty of the human frame is most conspicuous, is in the southern parts of the country. There it is amongst fishermen and sailors, who work half naked on the sea shore, that you get a full idea of the human form divine. There it is, at *Naples* and *Pouzzoli*, that you understand the meaning of the fable of the Titans, who were said to have fought with the Gods hard by, in the Camp *Phlegrei*."

It used to be said among the *Grecians*, that the ladies of *Ionia* were the most noted for their beauty. Their orators and poets, if they wished to compliment a lady, would call her person an *Ionian figure*. And a modern traveller observes, "that the whiteness of the skin, and the freshness and vivacity of the complexions, of the women in this country, are too captivating for human frailty to withstand."—This undoubtedly is owing to the climate, which is soft and temperate, calculated to mould the form, as well as the mind, into the first models of perfection, were it not for causes, which will hereafter be mentioned.

These facts are sufficient, we think, to prove that climate affects the body, and by parity of reasoning, the mind also. But, it may be asked if the climate is the same now, as it was a thousand years ago, why does it not produce the same effect? The climate of *Ionia* has always been the same, but where now will you find an *Apelles*? The climate of *Egypt* is the same now as it was in the days of the *Ptolemies*—but where will you find an *Ruchid*? where are the elegant *Cleopatras*? The Nile still continues to overflow its banks. The crocodile still haunts its shores. The fruits of the earth are the same. But *Theban* ruins proclaim genius dethroned.—How shall we solve this problem—undoubtedly, we must principally look to moral and political causes for its solution; and next to them, to education, and *manner* or *mode* of living—perhaps the latter has not a great effect, but it has some. In the first place, Genius must be patronized—if it is intended it shall flourish. The glory of the *Periclean* age, was chiefly owing to this circumstance. The mind was not only left free to act, but stimulated by almost every incentive. Ampla

rewards and honours always followed merit. It has been said, that no age could have produced a *Phidias* but the *Periclean*. And it is equally certain that a *PHIDIAS* could not have flourished, unless a *Pericles* had been his patron.—Unquestionably we must look to *patronage* as the *greatest* cause why genius flourishes in one age rather than in another, or in one country rather than in another. It must be protected and encouraged by government. The government of the United States is happily calculated for the progress of genius, if *patronage* was to be found; but unfortunately for us *patronage* is not found, unless it is for some improvements in mechanics which save labour. All our celebrated artists are obliged to go to Europe to be properly rewarded. The wonder of the age, *Zerah Colburn*, is now at school in London—ages may pass away before another such genius will be produced. He ought to have been made an object of national *patronage*.—But we hope as the wealth of this country increases, and if our liberties are preserved, genius will, in time, meet with ample encouragement.

Next to a free government and *patronage*, perhaps education has the most influence in calling forth the powers of the mind. By education is not here meant that study which is requisite for any particular effort or calling; but the general habits, impressions, and strength, which the mind derives from its culture in early life. From the *Spartan* mode of education solely, no country produced better soldiers than *Sparta*. Trained up in the severest exercises, no soldiers were more enabled to endure fatigue; and taught in youth to love their country, and to be fearless of death, they fought with a courage seldom equalled in ancient or modern warfare. But the laws of *Lycurgus* were not calculated to produce the splendour of *Pericles*: neither did their education qualify them to relish Athenian elegance:—on the contrary, a proud independence of thought and action, without refinement—without those accomplishments, which could bring, even a *Pericles* to the feet of a wanton, though elegant *Aspasia* was the result of the *Spartan* education.—The Athenian mode of education, on the contrary, particularly after the expulsion of *Pisistratus* was very favourable to all the arts and sciences. The

mind was stimulated to labour by suitable rewards. Besides this, Athenian patrons made the works of genius fashionable. The chisel of Praxitiles commanded the tribute of praise. The stature of *Venus*, made its sculptor an object of universal admiration. In fact where the encouragement of genius is made fashionable, where education is favourable—if no obstacles are thrown in the way by government, it will flourish in almost any country—most however in mild and soft climates, for the reasons which have been suggested.

*Mode of living* has some effect upon the mind. It has been said that the difference in the complexion and colour in the human species, is principally owing to this circumstance. If, therefore, mode of living has such an effect upon the human frame, we have a right to conclude it must have some effect upon the mind—as it is universally acknowledged that what effects the *one*, operates in some measure upon the *other*.

To this is ascribed the difference between the present race of *Egyptians* and the ancient inhabitants of that country. Their present mode of living makes them indolent; of course their minds are left uncultivated. They are in fact torpid. It is however, not pretended that this is the greatest cause of their present degenerate situation. The oppression of their government contributes the most to this depravity, but their manner of living undoubtedly has some effect.

If the foregoing remarks are correct, we can very easily determine how far we are excelled by the English. That they patronize genius more than we do, we cannot deny; but their boasted superiority of native genius is a downright absurdity. In fact their climate is not so favourable as ours, so far as climate has any effect—and their government is not better; early education is not better, if as good;—our mode of living is more favourable—but in patronage they exceed us. But we hope and trust that our exertions and industry will be such, that even in this, we shall not be behind them.

---

 THE BABBLER, NO. II.
 

---

*"Non mihi si linguæ centum sint oraque centum possim" dicere quid volo.*

I AM determined to make use of the above quotation as often as I choose; I therefore request all my handsome readers not to ask any questions about it; for I'll write fifty numbers upon the same subject, if I feel disposed, and if they don't like it, as my uncle Toby says, they may lump it.——I can't imagine, said I to myself, a few evenings since, while looking out of my window, on a large steeple which ascended heavenward almost beyond my ken, and which excels in beauty every other piece of architecture in the known world; not excepting the Pope's mansion at Rome; I can't imagine, said I, looking very wise, for I that moment threw my eyes from the steeple on a looking-glass on the other side of the room, and saw myself as large as life; and for all the world I thought I look'd exactly like Doctor Johnson; my head was tuck'd on one shoulder; my under jaw hung down at least three inches and a half, while my whole countenance, in consequence of a little nerve fretting a few minutes before, wore a most surly and souring aspect;—I can't imagine—but I am apprehensive this sentence is already too long to suit the classical taste and elegance of our Gibbons and Addison,—I will, therefore, arrest its progress at once, go back, and take a fair start.

I can't imagine, said I to myself, a few evenings since, why people should be so fond of applying every thing that is said or written to themselves. It is true they have a right so to do, if they choose, or if what is said or written suits them; but why they should be so fond of exercising this right, puzzles me.—But so it is. If a moralist should happen to declaim against gambling, or any other fashionable vice of the present day, and make use of the letters N——zar, immediately all the Nebuchadnezzars in town would be in an uproar; each one would suppose himself particularly pointed at; whereas the moralist,



in the honesty of his heart, might not mean one Nebuchadnezzar more than another, or perhaps one gambler more than another. So also it is with the poor poet; in writing a sonnet to his mistress' eyebrow, should he happen to make use of the letters B——da, he would have a score or two of Belindas about his ears at once; and whether it was good or bad, complimentary or satirical, all would put in a claim for the effusion, when perhaps the poet might not have known even one tenth part of them; or what is still more probable, might not have even thought of one of the fair souls, but of some ethereal sprite, whom he chose to call by that name, and to whom he was paying his devours.—But not only the Belindas, but all the Clarence Harveys must have something to say about it. They must all know why he presumed to burlesque or compliment their Belindas. So that, in fact, the poor fellow, notwithstanding he was innocent as a lamb, when he felt his “eye in a fine frenzy rolling,” and meant nothing more than to woo the favour of some aerial being, when he poured forth the feelings of soul, must suffer as much as though he had been actually guilty of an intended insult. I recollect it was my misfortune once, while on my travels (for, gentle readers, you must know that I have travelled) to lodge in the same house with a certain biped, that is sometimes called a Cynick Philosopher, and sometimes a hypochondriack. The fellow was very tall, very lank, with sharp eyes and peaked nose, and had a mouth that almost reached from ear to ear. What his underdress was, I never could determine, for he usually wore three great coats, which completely screened every part of his body, except the tip end of his boots, and his face, which was as aforesaid. I observed, also, when the wind blew northeast, he always wore an uncommon large pudding, or to speak more classically a stuffed cravat. What that was for I could not for a long time conjecture; but at length I discovered, that at such times he wore two pair of dirty stockings about his neck, to prevent his catching the sore throat; or rather to cure his throat before it became sore; for he was a great stickler for the new professional practise of curing disorders before they come on. This strange animal took a

particular dislike to me, and what it was for, I never could discover. But he always thought, when I made any remarks-upon any subject whatever, I meant they should apply to him in particular. He took every thing I said to himself, and thought I meant to insult him, and two or three times became quite outrageous. Once, I recollect, I was making some observations upon electricity, when, all of a sudden, he started up, and wanted to know if he was to blame for having weak nerves. For my life, I could not at first comprehend him. I could not conjecture what connexion there could possibly be between electricity and his nervous system. But I found out afterwards, he had gone through a course of electrical experiments, to cure the asthma, which, however, instead of curing his wheezing, only affected his nerves, and made him so petulant, that he never could hear an electrick battery mentioned without starting. At another time, I was declaiming against the fashion some of our young fellows followed, in tying a huge quantity of cravats about their necks in hot weather; he immediately wished to know if I meant to insult his sore throat. I told him I had not observed the weather-cock that day, if I had, I should have forborne the remark. But the most curious circumstance of all was that he sometimes fancied himself a clock. I remember once, in making some remarks on the mechanism of the human mind, I observed it was complete clock-work; and that it was a great pity, since it was so nicely wound up, that it would not always go, and keep good time. The remark I thought rather witty than otherwise; but he started up, and left the room as though he had been thunder-belted; and the next thing we saw was his being stuck up in a corner of an old room, with a huge pair of compasses dangling from the partly inverted cone of his long nose, for hour and minute hands, with an old cymbal at his feet, with his mouth clucking, and arm swinging clock-like, sure enough. Well, said he, what do you think of clock-work now? Well, Mr. Babbler, do I keep time to suit you? I could not help smiling—but, poor fellow, he was wound up for the last time shortly after. Now I suppose my wisdom-pretending readers will think I am going to ask their pardon for this digression;—

but no such thing, I assure them;—the story was well told, and completely in point;—but if it was neither, I should not ask their pardon, for I mean to tell stories when I choose, in point or not in point. But in order to make some amends, I will condescend to finish my subject in the real Johnsonian style. The subject, if I recollect rightly, was the disposition mankind have, to apply every thing that was said or written, to themselves. When we take into consideration the abundance of pride, with which human nature abounds; when we take into view the redundancy of arrogance which mankind in general possess, we feel at a loss to account for that extreme susceptibility they have of satire or of praise. We might justly suppose that the high-toned notions of self-importance which they possess, would shield them from the sting of the one, as well as make them impregnable to the honied battery of the other; but, contrary to expectation, we find them unable to withstand the power of either. They equally feel the scorpion's lash, and the flatterer's feather; and indeed so powerful is this feeling, that the paucity of intellect, or the poverty of situation, does not diminish its influence. The same pomposity of thought, as well as the same pomposity of action, accompanies the beggar as well as the Lord. Whether at the flood, or at the lowest ebb, we find in fact all will contrive to buoy themselves up, upon the flatus bladders of hope, all will feel the same degree of imaginary independence, while they *act*, perhaps, as the most dependent beings. But how does it happen, with these fancied notions of superiority in both extremes, that they can feel culpability or praise? Is it the suggestions of conscience that makes them feel the former? Conscience we believe is the child of education and habit, and if the education has been consistent, conscience cannot inflict such a wound. It must be vanity in both instances. This is the source of mortification or flattery. They feel reproach, not because principle is offended, but because vanity is wounded, and when vanity is wounded, jealousy, envy and malice, all bring forward their contributions to increase the evil—and they feel praise, not because praise is their due, but because their risibilities are *befeathered*, and

when the risibles are excited, joy thrills through every avenue of the human frame. Thus, then, we have the secret of that self-application of every thing that is said or written. It is vanity. Thus then the riddle is explained—and hereafter, when we see the Nebuchadnezzars and Belindas applying what is said or written, we shall need no ghost to tell us what it all means.

---

### ANECDOTE OF JOHN CHAMPE.

[Concluded from our last.]

ABOUT three o'clock in the evening our party returned, and the soldiers, seeing the horse (well known to them) in our possession, made the air resound with exclamations that the scoundrel was killed.

Major Lee, called by this heart-rending annunciation from his tent, saw the sergeant's horse led by one of Middleton's dragoons, and began to reproach himself with the blood of the high prized faithful and intrepid Champe. Stifling his agony, he advanced to meet Middleton, and became somewhat relieved as soon as he got near enough to discern the countenance of his officer and party. There was evidence in their looks of disappointment, and he was quickly relieved by Middleton's information that the sergeant had effected his escape with the loss of his horse, and narrated the particulars just recited.

Lee's joy was now as full as, the moment before, his torture had been excruciating. Never was a happier conclusion. The sergeant escaped unhurt, carrying with him to the enemy undeniable testimony of the sincerity of his desertion,—cancelling every apprehension before entertained, lest the enemy might suspect him of being what he really was.

Major Lee imparted to the commander in chief the occurrence, who was sensibly affected by the hairbreadth escape of Champe, and anticipated with pleasure the good effect sure to follow the enemy's knowledge of its manner.

On the fourth day after Champe's departure, Lee received a letter from him, written the day before in a disguised hand, without any signature, and stating what had passed after he got on board the galley, where he was kindly received.

He was carried to the commandant of New York as soon as he arrived, and presented the letter addressed to this officer from the captain of the galley. Being asked to what corps he belonged, and a few other common questions, he was sent under care of an orderly sergeant to the adjutant-general, who, finding that he was sergeant-major of the legion horse, heretofore remarkable for their fidelity, he began to interrogate him. He was told by Champe, that such was the spirit of defection which prevailed among the American troops in consequence of Arnold's example, that he had no doubt, if the temper was properly cherished, Washington's ranks would not only be greatly thinned, but that some of his best corps would leave him. To this conclusion, the sergeant said, he was led by his own observations, and especially by his knowledge of the discontents which agitated the corps to which he had belonged. His size, place of birth, his form, countenance, colour of his hair, the corps in which he had served, with other remarks, in conformity to the British usage, was noted in a large folio book. After this was finished, he was sent to the commander in chief, in charge of one of the staff, with a letter from the adjutant-general. Sir Henry Clinton treated him very kindly, and detained him more than one hour, asking him many questions, all leading,—first to know to what extent this spirit of defection might be pushed by proper incitements,—what the most operating incitements,—whether any general officers were suspected by Washington as concerned in Arnold's conspiracy, or any other officers of note;—who they were, and whether the troops approved or censured Washington's suspicion's—whether his popularity in the army was sinking, or continued stationary. What was major Andre's situation,—whether any change had taken place in the manner of his confinement,—what was the current opinion of his probable fate,—and whether it was thought Washington would treat him as a spy. To these various interrogations, some of which

were perplexing, Champe answered warily; exciting, nevertheless, hopes that the adoption of proper measures to encourage desertion (of which he could not pretend to form an opinion) would certainly bring off hundreds of the American soldiers, including some of the best troops, horse as well as foot. Respecting the fate of Andre, he said he was ignorant, though there appeared to be a general wish in the army that his life should not be taken; and that he believed it would depend more upon the disposition of Congress, than on the will of Washington.

After this long conversation ended, Sir Henry presented Champe with a couple of guineas, and recommended him to wait upon general Arnold, who was engaged in raising an American legion in the service of his majesty. He directed one of his aids to write to Arnold by Champe, stating who he was, and what he had said about the disposition in the army to follow his example; which very soon done, it was given to the orderly attending on Champe to be presented with the deserter to general Arnold. Arnold expressed much satisfaction on hearing from Champe the manner of his escape, and the effect of Arnold's example; and concluded his numerous inquiries by assigning quarters to the sergeant,—the same as were occupied by his recruiting sergeants.

He also proposed to Champe to join his legion, telling him he would give to him the same station he had held in the rebel service, and promising further advancement when merited. Expressing his wish to retire from war, and his conviction of the certainty of his being hung if ever taken by the rebels, he begged to be excused from enlistment; assuring the general, that should he change his mind, he would certainly accept his offer. Retiring to the assigned quarters, Champe now turned his attention to the delivery of his letters, which he could not effect until the next night, and then only to one of the two incognita to whom he was recommended. This man received the sergeant with extreme attention, and having read the letter, assured Champe that he might rely on his faithful co-operation in doing every thing in his power consistent with his safety, to guard which required the utmost prudence and circumspection. The

sole object in which the aid of this individual was required, regarded the general and others of our army, implicated in the information sent to Washington by him. To this object Champe urged his attention; assuring him of the solicitude it had excited, and telling him that its speedy investigation had induced the general to send him into New-York. Promising to enter upon it with zeal, and engaging to send out Champe's letters to major Lee, he fixed the time and place for their next meeting, when they separated.

Lee made known to the general what had been transmitted to him by Champe, and received in answer directions to press Champe to the expeditious conclusion of his mission; as the fate of Andre would be soon decided, when little or no delay could be admitted in executing whatever sentence the court might decree. The same messenger who brought Champe's letter, returned with the ordered communication. Five days had nearly elapsed after reaching New-York, before Champe saw the confidant to whom only the attempt against Arnold was to be entrusted. This person entered with promptitude into the design, promising his cordial assistance. To procure a proper associate to Champe was the first object, and this he promised to do with all possible despatch. Furnishing a conveyance to Lee, we again heard from Champe, who stated what I have related, with the additional intelligence that he had that morning (the last of September) been appointed one of Arnold's recruiting sergeants, having enlisted the day before with Arnold; and that he was induced to take this afflicting step, for the purpose of securing uninterrupted ingress and egress to the house which the general occupied; it being indispensable to a speedy conclusion of the difficult enterprise which the information he had just received had so forcibly urged. He added, that the difficulties in his way were numerous and stubborn, and that his prospect of success was by no means cheering. With respect to the additional treason, he asserted that he had every reason to believe that it was groundless; that the report took its rise in the enemy's camp, and that he hoped soon to clear up that matter satisfactorily. The pleasure which the last part of this communica-

tion afforded, was damped by the tidings it imparted respecting Arnold, as on his speedy delivery depended Andre's relief. The interposition of Sir Henry Clinton, who was extremely anxious to save his much loved aid-de-camp, still continued; and it was expected the examination of witnesses and the defence of the prisoner, would protract the decision of the court of inquiry, now assembled, and give sufficient time for the consummation of the project committed to Champe. A complete disappointment took place from a quarter unforeseen and unexpected. The honourable and accomplished Andre, knowing his guilt, disdained defence, and prevented the examination of witnesses by confessing the character in which he stood. On the next day (the 2d of October) the court again assembled; when every doubt that could possibly arise in the case having been removed by the previous confession, Andre was declared to be a spy, and condemned to suffer accordingly.

The sentence was executed on the subsequent day in the usual form, the commander in chief deeming it improper to interpose any delay. In this decision he was warranted by the very unpromising intelligence received from Champe,—by the still existing implication of other officers in Arnold's conspiracy,—by a due regard to publick opinion,—and by real tenderness to the condemned.

Neither Congress nor the nation could have been with propriety informed of the cause of the delay, and without such information it must have excited in both alarm and suspicion. Andre himself could not have been entrusted with the secret, and would consequently have attributed the unlooked for event to the expostulation and exertion of sir Henry Clinton, which would not fail to produce in his breast expectations of ultimate relief; to excite which would have been cruel, as the realization of such expectation depended upon a possible but improbable contingency. The fate of Andre, hastened by himself, deprived the enterprise committed to Champe of a feature which had been highly prized by its projector, and which had very much engaged the heart of the individual chosen to execute it.



Washington ordered major Lee to communicate what had passed to the sergeant, with directions to encourage him to prosecute with unrelaxed vigour the remaining objects of his instructions, but to intermit haste in the execution only as far as was compatible with final success.

This was accordingly done by the first opportunity, in the manner directed. Champe deplored the sad necessity which occurred, and candidly confessed that the hope of enabling Washington to save the life of Andre, (who had been the subject of universal commiseration in the American camp) greatly contributed to remove the serious difficulties which opposed his acceding to the proposition when first propounded. Some documents accompanied this communication, tending to prove the innocence of the accused general; they were completely satisfactory, and did credit to the discrimination, zeal and diligence of the sergeant. Lee inclosed them immediately to the commander in chief, who was pleased to express the satisfaction he derived from the information, and to order the major to wait upon him the next day; when the whole subject was re-examined, and the distrust heretofore entertained of the accused was forever dismissed.\* Nothing now remained to be done, but the seizure and safe delivery of Arnold. To this object Champe gave his undivided attention; and on the 19th October, major Lee received from him a very particular account of the progress he had made, with the outlines of his plan. This was, without delay, submitted to Washington; with a request for a few additional guineas. The general's letter,† written on the same day,

\* Copy of a letter from general Washington to major Lee, in his own handwriting.

October 13, 1780.

DEAR SIR,—I am very glad your letter, of this date, has given strength to my conviction of the innocence of the gentleman who was the subject of your inquiry. I want to see you on a particular piece of business. If the day is fair, and nothing of consequence intervenes, I will be at the marquis's quarters by ten o'clock to-morrow. If this should not happen, I shall be glad to see you at head-quarters.

I am, dear Sir, your obedient servant,

G. WASHINGTON.

† Copy of a letter from general Washington to major Lee, in his own handwriting.

Head-quarters, October 20, 1780.

DEAR SIR—The plan proposed for taking A——d (the outlines of which are communicated in your letter, which was this moment put into my hands

(20th October) evinces his attention to the minutiae of business, as well as his immutable determination to possess Arnold alive, or not at all. This was his original injunction, which he never omitted to enforce upon every proper occasion.

Major Lee had an opportunity in the course of the week of writing to Champe, when he told him that the rewards which he had promised to his associates would be certainly paid on the delivery of Arnold; and in the mean time, small sums of money would be furnished for casual expenses, it being deemed improper that he should appear with much, lest it might lead to suspicion and detection. That five guineas were now sent, and that more would follow when absolutely necessary.

Ten days elapsed before Champe brought his measures to conclusion, when Lee received from him his final communication, appointing the third subsequent night for a party of dragoons to meet him at Hoboken, when he hoped to deliver Arnold to the officer. Champe had, from his enlistment into the American legion (Arnold's corps) every opportunity he could wish, to attend to the habits of the general. He discovered that it was his custom to return home about twelve every night, and that previous to going to bed he always visited

without date) has every mark of a good one. I therefore agree to the promised rewards; and have such entire confidence in your management of the business, as to give it my fullest approbation; and leave the whole to the guidance of your own judgment, with this express stipulation and pointed injunction, that he (A——d) is brought to me alive.

No circumstance whatever shall obtain my consent to his being put to death. The idea which would accompany such an event, would be that ruffians had been hired to assassinate him. My aim is to make a publick example of him: and this should be strongly impressed upon those who are employed to bring him off. The sergeant must be very circumspect;—too much zeal may create suspicion,—and too much precipitancy may defeat the project. The most inviolable secrecy must be observed on all hands. I send you five guineas; but I am not satisfied of the propriety of the sergeant's appearing with much specie. This circumstance may also lead to suspicion, as it is but too well known to the enemy that we do not abound in this article.

The interviews between the party in and out of the city, should be managed with much caution and seeming indifference; or else the frequency of their meetings, &c. may betray the design, and involve bad consequences; but I am persuaded you will place every matter in a proper point of view to the conductors of this interesting business, and therefore I shall only add, that

I am, dear sir, &c. &c.

G. WASHINGTON.

the garden. During this visit the conspirators were to seize him, and being prepared with a gag, intended to have applied the same instantly.

Adjoining the house in which Arnold resided, and in which it was designed to seize and gag him, Champe had taken off several of the palings and replaced them, so that with care and without noise he could readily open his way to the adjoining alley. Into this alley he meant to have conveyed his prisoner, aided by his companion, one of two associates who had been introduced by the friend to whom Champe had been originally made known by letter from the commander in chief, and with whose aid and counsel he had so far conducted the enterprise. His other associate was with the boat prepared at one of the wharves on the Hudson river, to receive the party.

Champe and his friend intended to have placed themselves each under Arnold's shoulder, and to have thus borne him through the most unfrequented alleys and streets to the boat; representing Arnold, in case of being questioned, as a drunken soldier whom they were conveying to the guard-house.

When arrived at the boat the difficulties would be all surmounted, there being no danger nor obstacle in passing to the Jersey shore. These particulars as soon as known to Lee, were communicated to the commander in chief, who was highly gratified with the much desired intelligence. He directed major Lee to meet Champe, and to take care that Arnold should not be hurt. The day arrived, and Lee with a party of dragoons left camp late in the evening, with three led accoutred horses; one for Arnold, one for the sergeant and the third for his associate, never doubting the success of the enterprise, from the tenour of the last received communication. The party reached Hoboken about midnight, where they were concealed in the adjoining wood,—Lee with three dragoons stationing himself near the river shore. Hour after hour passed,—no boat approached. At length the day broke and the major retired to his party, and with his led horses returned to camp, when he proceeded to head-quarters to inform the general of the much lamented disappointment, as mortifying as inexplicable. Washington having

perused Champe's plan and communication, had indulged the presumption that at length the object of his keen and constant pursuit was sure of execution, and did not dissemble the joy such conviction produced. He was chagrined at the issue, and apprehended that his faithful sergeant must have been detected in the last scene of his tedious and difficult enterprise.

In a few days, Lee received an anonymous letter from Champe's patron and friend, informing him that on the day preceding the night fixed for the execution of the plot, Arnold had removed his quarters to another part of the town, to superintend the embarkation of troops, preparing (as was rumoured) for an expedition to be directed by himself; and that the American legion, consisting chiefly of American deserters, had been transferred from their barracks to one of the transports; it being apprehended that if left on shore until the expedition was ready, many of them might desert. Thus it happened that John Champe, instead of crossing the Hudson that night, was safely deposited on board one of the fleet of transports, from whence he never departed until the troops under Arnold landed in Virginia! Nor was he able to escape from the British army until after the junction of Lord Cornwallis at Petersburg, when he deserted; and proceeding high up into Virginia he passed into North-Carolina near the Saura towns, and keeping in the friendly districts of that state, safely joined the army soon after it had passed the Congaree in pursuit of lord Rawdon.

His appearance excited extreme surprize among his former comrades, which was not a little increased when they saw the cordial reception he met with from the late major now lieutenant-colonel Lee. His whole story soon became known to the corps, which reproduced the love and respect of officer and soldier (heretofore invariably entertained for the sergeant,) heightened by universal admiration of his late daring and arduous attempt.

Champe was introduced to general Greene, who very cheerfully complied with the promises made by the commander in chief, as far as in his power; and having provided the sergeant with a good horse and money for his journey, sent him to gener-

al Washington; who munificently anticipated every desire of the serjeant and presented him with his discharge from further service,\* lest he might, in the vicissitudes of war, fall into the enemy's hands; when, if recognized, he was sure to die on a gibbet.

\* When general Washington was called by president Adams to the command of the army, prepared to defend the country from French hostility, he sent to lieutenant colonel Lee to inquire for Champe; being determined to bring him into the field at the head of a company of infantry.

Lee sent to Loudon county, where Champe settled after his discharge from the army; when he learned that the gallant soldier had removed to Kentucky, where he soon after died.

---

## THE BATTLE OF CANNÆ.

[From Dr. Ferguson's History of the Roman Republick.]

*IN these times of difficulty and danger, we feel it our imperious duty to uphold, so far as we are able, the sacred cause of our country. We feel it our duty to animate our countrymen, to use their exertions to dispel the gloom which now hangs over them, and to rouse them once more to support the honour of their country, or else DIE in the attempt—"dulce et decorum pro patria mori."*—From these views we give the following elegant and classical account of the battle of Cannæ a place in the Repository.—We think it will afford not only a repast to our readers, but some useful hints to our military commanders; but what we most wish, it will afford, the American people a most heroick example, in the darkening hour of adversity. The battle of Cannæ was lost—but the Roman people despaired not of the Commonwealth. With all the "dignity of pride," they continued the war, and by an heroick and magnanimous policy, at length prevailed against their invader.

HANNIBAL, after endeavouring in vain to bring the Roman Dictator to a battle, perceived his design to protract the war; and considering inaction as the principal evil he himself had to

fear, frequently exposed his detachments, and even his whole army, in dangerous situations. The advantages he gave by these acts of temerity were sometimes effectually seized by his wary antagonist, but more frequently recovered by his own singular conduct and unfailing resources.

In this temporary stagnation of Hannibal's fortune, and in the frequent opportunities which the Romans had, though in trifling encounters, to measure their own strength with that of the enemy, their confidence began to revive. The publick resumed the tranquillity of its councils, and looked round with deliberation to collect its force. The people and the army recovered from their late consternation, and took advantage of the breathing-time they had gained, to censure the very conduct to which they owed the returns of their confidence and the renewal of their hopes. They forgot their former defeats, and began to imagine that the enemy kept his footing in Italy by the permission, by the timidity, or by the excessive caution of their leader.

A slight advantage over Hannibal, who had too much exposed his foraging parties, gained by the General of the horse in the absence of the Dictator, confirmed the army and the people in this opinion, and greatly sunk the reputation of Fabius. As he could not be superseded before the usual term of his office was expired, the Senate and people, though precluded by law from proceeding to an actual deposition, came to a resolution equally violent and unprecedented, and which they hoped might induce him to resign his power. They raised the General of the horse to an equal command with the Dictator, and left them to adjust their pretensions between them. Such affronts, under the notions of honour which in modern times are annexed to the military character, would have made it impossible for the Dictator to remain in his station. But in a commonwealth, where, to put any personal consideration in competition with the publick, would have appeared absurd; seeming injuries done by the state to the honour of a citizen, only furnished him with a mere splendid occasion to display his virtue. The Roman Dictator continued to serve under this diminution of his rank and command, and overlooked with magnanimity the insults with

which the people had required the service he was rendering to his country.

Minutius being now associated with the Dictator, in order to be free from the restraints of a joint command, and from the wary counsels of his colleague, desired, as the properest way of adjusting their pretensions, to divide the army between them. In this new situation, he soon after, by his rashness, exposed himself and his division to be entirely cut off by the enemy. But being rescued by Fabius, he too gave proofs of a magnanimous spirit, confessed the favour he had received, and committing himself, with the whole army, to the conduct of his colleague, he left this cautious officer, during the remaining period of their joint command, to pursue the plan he had formed for the war..

At this time, however, the people, and even the Senate, were not willing to wait for the effects of such seemingly languid and dilatory measures as Fabius was inclined to pursue. They resolved to augment the army in Italy to eight legions, which, with an equal number of the allies, amounted to eighty thousand foot and seven thousand two hundred horse; and they intended, in the approaching election of consuls, to choose men not only of reputed ability, but of decisive and resolute counsels. As such they elected C. Terrentius Varro, supposed to be of a bold and dauntless spirit; and, in order to temper his ardour, joined with him in the command L. Emilius Paulus, an officer of approved experience, who had formerly obtained a triumph for his victories in Illyricum and who was high in the confidence of the Senate, as well as in that of the people.

In the autumn before the nomination of these officers to command the Roman army, Hannibal had surprised the fortress of Cannæ on the Aufidus, a place to which the Roman citizens of that quarter had retired with their effects, and at which they had collected considerable magazines and stores. This, among other circumstances, determined the Senate to hazard a battle, and to furnish the new Consuls with instructions to this effect.

These officers, it appears, having opened the campaign on the banks of the Aufidus, advanced by mutual consent within six miles of the Carthaginian camp, which covered the village of

Cannæ. Here they differed in their opinions, and, by a strange defect in the Roman policy, which, in times of less virtue, must have been altogether ruinous, and even in these times was ill fitted to produce a consistent and well supported series of operations, had no rule by which to decide their precedency, and were obliged to take the command each a day in his turn.

Varro, contrary to the opinion of his colleague, proposed to give battle on the plain, and with this intention, as often as the command devolved upon him, still advanced on the enemy. In order that he might occupy the passage and both sides of the Aufidus, he encamped in two separate divisions on its opposite banks, having his larger division on the right of the river, opposite to Hannibal's camp. Still taking the opportunity of his turn to command the army, he passed with the larger division to a plain, supposed to be on the left of the Aufidus, and there, though the field was too narrow to receive the legions in their usual form, he pressed them together, and gave the enemy, if he chose it, an opportunity to engage. To accommodate his order to the extent of his ground, he contracted the head, and the intervals of his manipules or columns, making their depth greatly to exceed the front which they turned to the enemy.

He placed his cavalry on the flanks, the Roman knights on his right towards the river, and the horsemen of the allies on the left.

Hannibal no sooner saw this movement and disposition of the enemy, than he hastened to meet them on the plain which they had chosen for the field of action. He likewise passed the Aufidus, and, with his left to the river and his front to the south, formed his army upon an equal line with that of the enemy.

He placed the Gaulish and Spanish cavalry on his left, facing the Roman knights, and the Numidians on his right, facing the allies.

The flanks of his infantry, on the right and the left, were composed of the African foot, armed in the Roman manner, with the pilum, the heavy buckler, and the stabbing sword. His centre, though opposed to the choice of the Roman legions, consisted of the Gaulish and the Spanish foot, variously armed and intermixed together.



Hitherto no advantage seemed to be taken on either side. As the armies fronted South and North, even the sun, which rose soon after they were formed, shone upon the flanks, and was no disadvantage to either. The superiority of numbers was greatly on the side of the Romans; but Hannibal rested his hopes of victory on two circumstances: first, on a motion to be made by his cavalry, if they prevailed on either of the enemy's wings; next, on a position he was to take with his centre, in order to begin the action from thence, to bring the Roman legions into some disorder, and expose them, under that disadvantage, to the attack which he was prepared to make with his veterans on both their flanks.

The action accordingly began with a charge of the Gaulish and Spanish horse, who, being superiour to the Roman knights, drove them from their ground, forced them into the river, and put the greater part of them to the sword. By this event, the flank of the Roman army, which might have been joined to the Aufidus, was entirely uncovered.

Having performed this service, the victorious cavalry had orders to wheel at full gallop round the rear of their own army, and to join the Numidian horse on their right, who were still engaged with the Roman allies. By this unexpected junction, the left wing of the Roman army was likewise put to flight, and pursued by the African horse; at the same time the Spanish cavalry prepared to attack the Roman infantry, wherever they should be ordered, on the flank or the rear.

While these important events took place on the wings, Hannibal amused the Roman legions of the main body with a singular movement that was made by the Gauls and Spaniards, and with which he proposed to begin the action. These came forward, not in a strait line abreast, but swelling out to a curve in the centre, without disjoining their flanks from the African infantry, who remained firm on their ground.

By this motion they formed a kind of crescent convex to the front. The Roman maniples of the right and the left, fearing, by this singular disposition, to have no share in the action, hastened to bend their line into a corresponding curve, and, in pro-

portion as they came to close with the enemy, charged them with a confident and impetuous courage. The Gauls and Spaniards resisted this charge no longer than was necessary to awaken the precipitant ardour with which victorious troops often blindly pursue a flying enemy. And the Roman line being bent, and fronting inwards to the centre of its concave, the legions pursued where the enemy led them. Hurrying from the flanks to share in the victory, they narrowed their space as they advanced, and the men who were accustomed to have a square of six feet clear for wielding their arms, being now pressed together, so as to prevent entirely the use of their swords, found themselves struggling against each other for space, in an inextricable and hopeless confusion.

Hannibal, who had waited for this event, ordered a general charge of his cavalry on the rear of the Roman legions, and at the same time an attack from his African infantry on both their flanks; by these dispositions and joint operations, without any considerable loss to himself, he effected an almost incredible slaughter of his enemies. With the loss of no more than four thousand, and these chiefly of the Spanish and Gaulish infantry, he put fifty thousand of the Romans to the sword.

The Consul, Emilius Paulus, had been wounded in the shock of the cavalry; but when he saw the condition in which the infantry were engaged, he refused to be carried off, and was slain. The Consuls of the preceding year, with others of the same rank, were likewise killed. Of six thousand horse, only seventy troopers escaped with Varro. Of the infantry three thousand fled from the carnage that took place on the field of battle, and ten thousand who had been posted to guard the camp were taken.

The unfortunate Consul, with such of the stragglers as joined him in his retreat, took post at Venusia; and with a noble confidence in his own integrity, and in the resources of his country, put himself in a posture to resist the enemy, till he could have instructions and reinforcements from Rome.

The Romans were apprised of this formidable accession to the power of their enemy, as well as of the general defection of

their own allies, and of the revolt of their subjects. Though taxes were accumulated on the people, and frequent loans obtained from the commissaries and contractors employed in the publick service, their expenses began to be ill supplied. There appeared not, however, in their councils, notwithstanding all these circumstances of distress, the smallest disposition to purchase safety by mean concessions of any sort. When the vanquished Consul returned to the city, in order to attend the nomination of a person, who, in this extremity of their fortunes, might be charged with the care of the commonwealth, the Senate, as conscious that he had acted at Cannæ by their own instructions, and had, upon the same motives that animated the whole Roman people, disdained, with a superiour army, to stand in awe of his enemy, or to refuse him battle upon equal ground, went out in a kind of procession to meet him; and upon a noble idea, that men are not answerable for the strokes of fortune, nor for the effects of superiour address in the enemy, they overlooked his temerity and his misconduct in the action; they attended only to the undaunted aspect he preserved after his defeat, returned him thanks for not having despaired of the commonwealth; and from thenceforward continued their preparations for war, with all the dignity and pride of the most prosperous fortune. They refused to ransom the prisoners who had been taken by the enemy at Cannæ, and treated with sullen contempt, rather than severity, those who by an early flight had escaped from the field; being petitioned to employ them again in the war, "We have no service," they said, "for men who could leave their fellow citizens engaged with an enemy." They seemed to rise in the midst of their distress, and to gain strength from misfortune. They prepared to attack or to resist at once, in all the different quarters to which the war was likely to extend, and took their measures for the support of it in Spain, in Sardinia and Sicily, as well as in Italy. They continued their fleets at sea; not only observed and obstructed the communications of Carthage with the seats of the war, but having intercepted part of the correspondence of Philip with Hannibal, they sent a powerful squadron to the coast of Epirus; and, by an alliance with the States of

Etolia, whom they persuaded to renew their late war with Philip, found that prince sufficient employment on the frontiers of his own kingdom, effectually prevented his sending any supply to Hannibal, and, in the sequel, reduced him to the humiliating necessity of making a separate peace.

---

FOR THE REPOSITORY.

A SELECTION OF USEFUL MAXIMS. No. I.

**LIBERTY** is, to the collective body, what health is to every individual body. Without health, no pleasure can be tasted by man; without liberty, no happiness can be enjoyed by society.

The utmost private men can do, who remain untainted by the general contagion in a degenerate age, is to keep the spirit of liberty alive in a few breasts, to protest against what they cannot hinder, and to claim on every occasion what they cannot by their own strength recover.

Tyranny and slavery do not so properly consist in the stripes that are given, as in the power of giving them at pleasure, and the necessity of receiving them whenever and for whatever they are inflicted.

He who undertakes to govern a free people by corruption, and to lead them, by a false interest, against their true interest, cannot boast the honour of the invention; the expedient is as old as the world; and he can pretend to no other honour than that of being an humble imitator of the devil.

Neither Montagne in writing his *Essays*, nor Des Cartes in building new worlds, nor Burnet in framing an antediluvian earth, no, nor Newton in discovering and establishing the true laws of nature on experiment and a sublime geometry, felt more intellectual joys than he feels who is a real patriot, who bends all the force of his understanding, and directs all his thoughts and actions to the good of his country.

Eloquence, that leads mankind by the ears, gives a nobler superiority than power that every dunce may use, or fraud that every knave may employ, to lead them by the nose. But clo-

quence must flow like a stream that is fed by an abundant spring, and not spout forth a little frothy water on some gaudy day, and remain dry the rest of the year.

The true image of a free people, governed by a patriot king, is that of a patriarchal family, where the head and all the members are united by one common interest, and animated by one common spirit; and where, if any are perverse enough to have another, they will be soon borne down by the superiority of those who have the same; and, far from making a division, they will but confirm the union of the little state.

Faction is to party what the superlative is to the positive: party is a political evil, and faction is the worst of all evils.

Parties, even before they degenerate into absolute factions, are still numbers of men associated together for certain purposes, and certain interests, which are not, or which are not allowed to be, those of the community, by others.

From the misapplication of superiour parts to the hurt, no argument can be drawn against this position, that they were given for the good of mankind.

---

## LITERARY NOTICES.

AT the anniversary meeting of the Federal Adelpi Society, Sept. 8, 1814, the following Resolution was adopted, viz. "That six members of this corporation be appointed a committee to write the *ADELPHIAD*. And that the same be published in the *Rhode-Island Literary Repository*. In case that work be discontinued, in some other publick Paper in the Town of Providence, at the discretion of the committee.

A true copy from the Records,

Attest,

THOMAS RIVERS, *Recording Sec'y.*

---

We have lately examined a work in manuscript, which we hope soon to have the pleasure of seeing in print, by WILLIAM WINSOR, A. M. of this town. This work is entitled, "*Material Architecture, and Elements of Physical Mechanics.*" As it will be a matter of no small difficulty to give from a description, an idea of its contents, we shall content ourselves with an enumeration of the subjects treated of in its pages. Its object is to give a mechanical solution of the cause of the phenomena of motion; and

independent of experiments and observation, to place the evidence of the Newtonian Philosophy on the same foundation with pure Geometry. For this purpose it endeavours to derive the powers and laws of motion from the known and acknowledged properties of matter, by a Physico-Mathematical Analysis, in which, is investigated, by a "New Theory of the cause of Gravitation," the reason of the law of the diminution of its power reciprocally as the squares of the distances. This constitutes the first book, of the three into which the work is divided, and as its subject is by far the most important, so it is of all the rest, a subject of the greatest difficulty, in the execution. After so many theories, by names of the highest celebrity, it is but justice to observe, that the truth of this Analysis rests on no hypothesis whatever, but is founded on facts as they exist in nature. The Author, in order to assist the ideas of his readers, has given, in the introduction, a brief survey of the principal theories and opinions, which have been advanced on this subject, from the earliest records of science, to the present time, in which he has shewn the inadequacy of former theories; and points out the difference by which his system differs from others, which have been written upon the subject.

Having shewn in the first book, the reason of the law of the decrease of gravity inversely as the squares of the distances, he proceeds in the second, to derive the laws of internal gravitation, as corollaries directly deducible from this universal law of matter. Nothing is here claimed as original, but the manner of deriving former well known principles from a new source.

The third book contains the reasons of the fundamental principles of rational Mechanics, viz. the reasons of inertia, of impulse, and of the communication of Motion: An analysis of the laws of motion, and a brief review of the different kinds of motion in order to make an application of the analysis to the practical purposes of Philosophy. The remaining chapters of this book contain theories of many phenomena hitherto unresolved. These are mechanically deduced from the analysis of the first book. Amongst them we find theories of the cause of cohesion,—of the existence of fluidity in different bodies;—of Repulsion;—of Elasticity;—of the Polarity and variation of the Needle;—and of the polarity of light. Also a new theory of the cause of the diurnal motion of the earth; and some mathematical principles in order to enable us to investigate the cause of projectile motion. It will be sufficient to observe that all these laws of motion and theories are shewn to depend on the properties of matter discovered in the analysis, and on the law of the decrease inversely as the squares of the distances. By these means the phenomena of motion are all reduced to one law, as Boscovich had done before; but by a method entirely different from his; and investigated by a Physico-Geometrical Analysis, applied to the properties of matter.

## LINES,

*Occasioned by reading the life of Henry Kirk White.*

BY A YOUNG LADY OF BOSTON.

I SAW a drop whose trembling ray  
 Was bosom'd by a flower.  
 A sun-beam drew the gem away,  
 But Fancy in its gentle sway  
 Pursu'd it to a brighter day,  
 Gilding a fairer bower.

I saw a star whose sparkling beam,  
 Nature had fondly given.  
 I view'd it in the blue sky stream,  
 And as I watch'd its parting gleam,  
 Imagination's wakeful gleam  
 Pursu'd its flight to heaven.

I heard a strain of musick steal  
 On evening's sacred hour,  
 Giving that bliss which few can feel,  
 It ceased—but fancy still reveal'd  
 That rising to a lovelier field,  
 It charm'd a higher power.

Thus Henry trembled for a time  
 On earth's fast fading bloom;  
 Then died—but now a gem divine  
 Has triumph'd o'er the tomb.

Thus Henry shed his sparkling gleam  
 On fortune's changeful sky,  
 Then fled—but blest with brighter beams,  
 He shines a star on high.

Thus Henry's strains of sweetness, stole  
 On each enraptur'd ear:  
 Then ceased—but now a purer soul  
 He sings, and Angels hear.

The gem that sweetly trembles now,  
 The stars that gild the sky,  
 Soft musick, soothing sorrow's brow,  
 Must quickly fade and die.—  
 The soul alone will ne'er decay,  
 But sparkle in eternal day.

## THE THEATRE AT RICHMOND.

JOY and rapture gild the hour,  
 Grief forgets her tyrant power,  
     While mirth usurps the scone.  
 Smiles appear in every eye,  
 Sorrow flies with every sigh,  
     And pleasure springs between.

Dimpled cheeks are brightly glowing,  
 Flattery's words are lightly flowing,  
     While maidens bend to hear.  
 Lover's sighs are softly stealing,  
 Lover's hearts are sweetly feeling  
     That ev'ry joy is near.

Children catch the gen'ral pleasure,  
 And softly speak with lisping measure,  
     " Oh mother look at this!"  
 The parent with a parent's pride  
 Turns her infant's cheek aside,  
     To steal unseen a kiss.

Oh! hear'st thou that cry?—The quick rushing blood  
 Impetuous springs to each soul.  
 Oh! see'st thou that flame?—The wide spreading flood  
 Never flow'd with more dreadful control.

The fast rolling volumes roll fearfully on,  
 And envelope the building in fire:  
 They rise—they extend—the wide havock flies on,  
 And it moves for a funeral pyre.

Oh! how wild is that shriek! my *Father!* it sounds,  
 His arms at a distance are rais'd,  
 But those arms—Oh, just Heaven! a daughter have found  
 Enwrapt by the merciless blaze.

A deep groan of anguish sounds hollow and low,  
 From an old soldier's bosom it came—  
 The flames curl around him—now hush'd is his woe,  
 No groan speaks his anguish again.

" Oh! save my Louisa!" " In mercy give way,"  
 Cries a youth with convulsive alarms:  
 The crowds rush on headlong—unheeded they lay—  
 Their shrouds, their encircling arms.



Whose eye speaks so wildly his horrible fears,  
 As he turns from the merciless fire?  
 'Tis a Grandsire, and with him the joy of his years—  
 They fall—they are crush'd—they expire!

“ Oh! fly to me Henry! Oh! turn to me here,”  
 Joy brightens her love-beaming eye.  
 One moment of rapture—that moment how dear!  
 They meet—but they meet and they die.

A mother has pillow'd her child on her arm,  
 And rush'd to the window to save—  
 Her strength is subdued by the sudden alarm,  
 Her child finds the pavement its grave!

Now mingled and wild is the horrible cry,  
 Now solemn and awful the moan—  
 Now silent with terror, they fearfully fly,  
 Now fall—for death calls their last groan.

The sobs of affliction now murmur around,  
 And tears fraught with anguish are given,  
 Relations and friends catch the general sound,  
 And forget in their grief even heaven.

The flames are extinct—Oh! could I but say  
 That all anguish and horror will cease;  
 But time shall roll on, and day after day  
 Will bring to the mourner no peace.

But hush—let me cease! there is joy for the soul  
 Which, though chastened by sorrow and chill'd by despair,  
 Submits without struggle to Heaven's control,  
 And looks for enjoyment unblemish'd by care.

For earth with its pleasures will vanish away—  
 And those ties which our souls found so exquisite here;  
 Yet on high they'll be cherish'd—nor ever decay,  
 Ne'er depress'd by a sigh, nor subdu'd by a tear.



## TO A DEPARTED FRIEND.

BY A LADY.

WHEN sadness calls a tear,  
 When pains and griefs are near,  
 Misfortunes arrows flying,  
 While every hope is dying,  
 Sweet Spirit comfort me.

When sad, but not despairing,  
 For nothing earthly caring,  
 When nought of joy is given,  
 Some faith and hope in heaven,  
     Sweet Spirit comfort me.

When fearful doubts assail me,  
 And friendship's soothings fail me,  
 When not one cheering ray  
 Beams on my anxious day,  
     Sweet Spirit comfort me.

When earth and all its treasure,  
 Has ceased to yield a pleasure,  
 And every mournful sigh,  
 Speaks but the wish to die,  
     Sweet Spirit comfort me.

When memory's pleasures cease,  
 And all that whisper'd peace,  
 When age comes tottering on,  
 And joy and health are gone,  
     Sweet Spirit comfort me.

Should conscience rouse from slumber  
 And all my follies number,  
 Should terrors haunt my pillow,  
 Wild as the foaming billow,  
     Sweet Spirit comfort me.

When on my final hour  
 I feel death's chilling power,  
 And scarce with sins forgiven,  
 Dare hope for rest in heaven,  
     Sweet Spirit comfort me.

And when—but hush—no more—  
 I tremble and adore.  
 In such a blissful hour  
 I ask not for thy power,  
     My God shall comfort me.

## ROBINSON & HOWLAND

HAVE FOR SALE,

### *MEMOIRS of the Rev. THOMAS SPENCER,*

Compiled and published at the request of the Church and  
Congregation late under his pastoral care.

*By THOMAS RAFFLES.*

"As a testimony to the world of the admiration and esteem, his genius and his piety universally inspired; and as a grateful memorial of his acceptable labours, and transcendent excellencies as a minister, as a man, and as a christian."

THE untimely death of this youthful divine caused an universal gloom in Liverpool where he was settled—his unaffected piety, his zeal in the discharge of his ministerial duties, his humility, in fact, every virtue which adorns the christian character, made him beloved by all who had the pleasure of his acquaintance. He was accidentally drowned, while bathing on the 5th of August, A. D. 1811, aged 26 years and six months. One of the Liverpool gazettes speaks of him in these words—"Mr. Spencer was about 26 years of age, a youth of amiable and engaging manners; and his pulpit talents were so far above his years as to obtain for him a large share of publick admiration and popularity. His premature death has most deeply affected the feelings of his numerous friends, who looked forward to the maturity of his early powers with the highest hope of obtaining in him, a most valuable accession to the dissenting ministry." Another paper observes, "As a preacher his talents were held in a degree of estimation, and possessed an extent of influence which have seldom been equalled in the annals of pulpit eloquence. His discourses were rather hortatory than argumentative, or disquisitive, they were addressed more to the imagination and affections than to the judgment; and this, apparently, not so much from any deficiency of talent, as from a firm persuasion, that in matters of religion, the avenues to the understanding are chiefly to be sought in the heart. His sermons thus constituted, were adorned with a felicity of expression, and delivered in an unremitting fluency of language altogether surprising in extemporaneous discourses." But the feelings which were excited, and the concourse which attended his funeral, are the strongest evidence of his worth and the estimation in which he was held.—"Religion, humanity, friendship and genius," says his biographer, "mingled their tears at his grave."

CONSTANTLY FOR SALE BY

*Robinson & Howland,*

A COMPLETE ASSORTMENT OF

**STATIONARY,  
BLANK BOOKS, BIBLES,  
SCHOOL BOOKS, &c. &c.**

which they will sell at the lowest prices for cash.

---

***BLANK BOOKS***

ruled and bound to any pattern,

at the shortest notice.

**OLD BOOKS REBOUND.**