The seat of dyspepsia, hypochondria, and melancholy is in the brain as much as in the stomach. When brain-work is carried to excess, the whole system becomes pervaded by nervous excitability; the heart is affected as well as the stomach, the very pulse becomes nervous, all the bodily functions are imperfectly performed, and the end often is that the brain itself becomes stricken by disease in its worst forms. Cabanis said: "The nerves are the man;" and Moreau, that "Genius is a disease of the nerves." At such risks are some of the greatest products of genius achieved.

The brain, as we have said, has been compared to an electrical machine, giving off nerve-force in currents or shocks, the exhausting effect of which—as in the gymnotus electricus—is in proportion to their intensity and duration. If the expenditure of the supposed electric shocks be not intermitted by rest and sleep the result will be nervous exhaustion and mental insolvency. What we call genius, for the most part depends upon the intensity of the nerve-force. It has been described as a sudden explosion of cerebral sensibility—as a nervous flash of brain-power. "Our genius," said a poet, "consists in excited sensibility." "Men are nothing," said Montaigne, "until they are excited." "Everything yields," said Avicenna, "to the human soul elevated to ecstasy." Molière said of Corneille: "The god suddenly comes to him and dictates his fine lines, and then as suddenly leaves him." "I hear too much, I see too much," said an artist, "and I feel all round me for a league."

Poets have spoken of their moments of inspiration, when their intellect is at a white heat, during which they threw off their thoughts in a state of "fine phrenzy." At such times, Dryden felt a trembling all over him; Alfieri experienced an obscurity of vision; Rousseau had an access of fever. "My organization," said Beethoven, "is so

nervous that the slightest circumstance changes my joy into pain." Captain Medwin says that almost all Byron's and Shelley's finest things were written under the effects of a temporary derangement. Byron said of poetry, it is "the expression of excited passion." Mrs. Shelley said of her husband: "Through life he was a martyr to ill-health; and constant pain wound up his nerves to a pitch of susceptibility that rendered his views of life different from those of a man in the enjoyment of healthy sensations. . . . He suffered a great deal of excitement; his fortitude to bear was almost always on the stretch; and thus, during a short life, he had gone through more experience of sensation than many whose existence is protracted."

In the temple of the muses there are many human sacrifices. The intense poets live quick, and die quick.* At the same time it must be confessed that life is not merely to be measured by length of years, but by the sum of a man's sensations. The more he feels, the more he enjoys and the more he lives. What has a man felt, experienced, achieved? Thus some brilliant young men, who have died, worn out before forty, have really accomplished more than many octogenarians. As Shelley says:

* Many of the poets have not lived to enjoy repose under the shade of the laurels they have planted. Chatterton poisoned himself at eighteen; Kirke White died at twenty-one; Robert Ferguson at twenty-four; Keats at twenty-five; Pollock at twenty-eight; Shelley at thirty (accidentally drowned); Charles Wolfe at thirty-two: Suckling (supposed to have poisoned himself) at thirty-four; Otway at thirty-four; Tannahill (who drowned himself) at thirty-seven; Burns, Byron, and Praed at thirty-seven; Edgar Allan Poe at thirty-eight; Savage and Schiller at forty-six; Thomson at forty-eight; Cowley at forty-nine; Tasso at fifty-one; Virgil, Molière, and Shakespeare at fifty-two; Gray, Camœns, and Alfieri at fifty-five; Dante and Pope at fifty-six; Ovid and Horace at fifty-seven; Ariosto and Racine at fifty-nine. On the other hand, poets of contemplative imagination have for the most part lived to a comparatively old age. Thus Milton lived to sixty-six; Chaucer to seventy-two; Klopstock to seventy-nine; Wordsworth to eighty; and Goethe to eighty-three. Tennyson and Browning are still with us.

> "The good die first,
> While they whose hearts are dry as summer's dust
> Burn to the socket

Dean Swift even alleged that no great man could live to old age. When people talked to him of a fine old man, he said: "If his head or heart had been worth anything, he would have been worn out long ago." Only a certain amount of nervous fire can be got out of a man, as only so much flame and heat out of a given quantity of fuel. The quicker the combustion, the sooner is it reduced to dust and ashes. When the doctors were standing by the bedside of Van Orbeeck, the Dutch painter, and were founding some hopes upon his age the artist said: "Gentlemen, have no regard for my forty-six years; you must count them *double*, for I have lived day and night." He was, however, a man exhausted by work, pleasure, and excess. He was not therefore a normal, but an abnormal example. There have been other men of powerful intellect, who, with carefulness and attention to bodily exercise, have lived to old age; and grown the wiser the older they grew. The ancient writers designated such men "the elect of nature"; for they joined to an athletic frame an energetic nervous temperament, and were apt either for physical or mental toil. Thus the great Plato was famous alike for the breadth of his shoulders and the force of his imagination, for the strength of his body and the vigor of his intellect. In more recent times, Michael Angelo, Leonardo da Vinci, Buffon, Gluck, Gustavus Adolphus, John Sobieski, Goethe, the Duke of Wellington, have exhibited the same intense power of "staying," together with nervous sensibility, both combined in the same person.

The evils of over-sensitiveness are exaggerated by the sedentary lives which most brain-workers lead. Their occupation, at the desk or writing-table, keeps them in a constrained position, which prevents the free play of their

chest, and the inhalation of fresh air into the lungs.* Where they breathe impure air, or work during the night, as is often the case, the effects are still more disastrous. The physical system ceases to be properly nourished. Air and light are as necessary for the nutrition of the body as food; for, while food is only required at intervals, air is necessary in every breath we draw. When the lungs are not properly inflated, the blood cannot be oxygenated. Sanguification is imperfect, and it follows that nutrition is imperfect. The action of the heart becomes languid, the blood is not propelled to the extremities of the system; but accumulates in the internal organs. Hence cold feet and skin; the *Pulchrum sublimum virorum florem*, as it was described by an early father, being nothing less than indigestion and nervousness, the result of over brain-work. The student becomes saturated with irritability, and is morbidly sensitive. His nerves are, so to speak, naked and exposed; and his extreme sensibility consumes the life that it ought to embellish.

The fragile constitution of brain-workers is greatly increased by the neglect of physical exercise. The artist, who painted the picture of the rosy-fingered Aurora opening the portals of the East, never saw the sun rise. Poets sing of the beauties of nature by gaslight, and in rooms into which the sun's light probably never enters. Tycho

* M. Reveillé-Parise is of opinion that some day medical men will insist on the proper exercise of the lungs as the best mode of maintaining health and prolonging life. "Je suis convaincu," he says, "que la veillesse commence et s'accroît par le poumon, que c'est dans cet organe essentiellement vasculaire et perméable, qui absorbe l'air, qui, le digére en quelque sorte et l'asimile à notre substance, que se trouve le point de départ de dégredation de l'organisme; et s'il était possible d'entretenir *l'hématose* ou sanguification, dans son état de perfection, je ne doute pas qu'on ne trouvât ainsi le vrai moyen de prolonger la vie humaine. Les générations futures décideront cette question, s'il est jamais permis à l'homme d'en donner la solution."—*Physiologie et Hygiène des Hommes livrés aux travaux de l'esprit*, i. pp. 237, 238.

Brahe scarcely ever issued from his observatory for twenty-one years; and the sedentary life which he led was doubtless the cause of the disease of which he died.* Another astronomer, the Abbé de la Caille, had a rest for his head invented, on which he spent his nights in watching the heavens. The celebrated Greek scholar, De Villoison, worked at his books fifteen hours a day. When La Harpe, who lived in one of the closest streets of old Paris, was asked what were his relaxations, he said that when he felt his head fatigued, he put it for a short time out of the window. That was his only exercise. These voluptuaries of science and learning suffer more than common men do. The wonder is, that nature should endure so much restraint, and still perform her functions so as to sustain life.

But the habit of working grows so much upon the brain-worker that he cannot restrain himself. When Petrarch complained of his health to the Bishop of Cavaillon, the latter at once understood the cause, and asked to have the keeping of the key of his study. Petrarch consented, but only for three days. Before that time had expired, the poet went to the bishop, and imploringly asked him: "Give me back the key of my study, or I shall die at your feet." We shall see, however, that those who thus violate the laws of nature, pay, whether by work or by worry, very heavy penalties in the long run.

The first penalty is loss of sound sleep. Brain-workers require more sleep than other people, and yet they often get less. When men work late, their exaltation of mind

* Civiale, in his treatise on *Calculous Affections*, gives a list of one hundred and forty-eight eminent philosophers, artists, and literary men who have been affected by these diseases, the result, for the most part, of their sedentary occupations. Amongst these men may be mentioned Bossuet, Buffon, Michael-Angelo, Bacon, D'Alembert, Amyot, Calvin, Casaubon, Desaugiers, Erasmus, Montaigne, Luther, Linnæus, Harvey, Leibnitz, Newton, Garrick, Rousseau, Scarp, Volney, Voltaire, Franklin, Sir Robert Walpole, Napoleon III., etc.

continues long after they have retired to rest. The brain goes on working, to the banishment of sleep. Like a mill, it goes on grind, grinding, though without grist! Will has no power over it, and it dreams and thinks, uncontrolled and incoherently. The brain can only recuperate its power, and bodily waste can only be repaired, by perfect rest,—by sound sleep; but when there is no sleep, but only half wakeful dreams, the brain and body are alike unrested and unrefreshed.

What a blessing is sleep! It is one of the happiest boons of youth, and we never know its value until we have lost it. "Sleep wraps one all round like a blanket," says Sancho Panza. Sir Philip Sidney knew its value; these are his words:—

> "Come Sleep, O sleep, the certain knot of peace,
> The baiting-place of art, the balm of woe,
> The poor man's wealth, the prisoner's release,
> The indifferent judge between the high and low."

When youth passes, and age advances, and work, worry, and anxiety distress the mind, then sleep disappears. Thought will not be silenced, the body tosses to and fro, and the down pillow becomes like a knotted log. That is the dark epoch in many a brain-worker's life. "You get up," says Haydon, "with a black veil over your fancy, through which you see all things."

Lord Clarendon said of Chillingworth: "His only unhappiness proceeded from his sleeping too little and thinking too much." There are few literary men who are not more or less afflicted by sleeplessness. Business men, too, often take their cares to bed with them; they lie tossing about, turning over the events of the past day—their enterprises, speculations, profits, and losses. Their brain is not nourished by rest, for they cannot sleep.

Pope, while occupied on the *Iliad*, once wished himself hanged that he might get rid of Homer. He was beside

himself with sleeplessness; and yet he worked at night. Lord Oxford's domestic related that, in the dreadful winter of '40, she was called from her bed by him four times in one night, to supply him with paper lest he should lose a thought.* Boerhaave, after one of his intense studies, did not close his eyes for six weeks. Goldoni, after writing sixteen plays in a year, paid the penalty for his folly during the rest of his life. Byron was troubled with sleeplessness, despondency, and "actual despair," during his composition of *Marino Faliero*. One night he "suffered horribly," and could only allay his distress by drinking an immense quantity of soda-water. John Hunter rarely slept more than four hours during the night, but he enjoyed an hour's sleep after dinner. The opinions of learned men have differed much as to the time required for sound sleep. Jeremy Taylor says that only three hours out of the twenty-four should be devoted to sleep; but this is far too short a period. Baxter fixes upon four hours, Wesley on six, and Lord Coke on seven. Sir Walter Scott required eight hours' sound sleep to keep his brain in full working order. Dr. Fowler, of Salisbury, a veteran well known in scientific circles, and to the last a frequenter of the British Association, said that one essential of long life was to "lie abed in the morning until you are *done enough*." He lived to ninety-eight.

When the sleep is sound, a smaller proportion will be sufficient to give rest and restore the powers of the brain. But when it is unsound, and spent chiefly in dreams and excitement, nature is not rested, and the brain and body remain unrefreshed. The excited mind continues to work even in dreams. In such a state Sir Isaac Newton solved a difficult mathematical problem. Condorcet relates that having retired to bed, jaded with some intricate calculations

* Elwin, *Works of Pope*, vi. p. 23.

which remained unfinished, he completed them in his dreams. Condillac, when writing his *Cours d' Etude*, found that a course of thought which he had broken off on retiring to rest, was continued and finished during the night. Sir. Benjamin Brodie relates a case in which a friend actually completed an invention during his dreams, and another who solved mathematical problems which had baffled him when awake. Coleridge, after reading a passage in Purchas's *Pilgrimage*, composed his poetical fragment, *Kubla Khan*, during a dream. Tartini is said to heve composed his *Devil's Sonata* from the inspiration of a dream, in which the devil challenged him to a trial of skill upon his violin.

Some philosophers are of opinion that dreams are continuous, and last through the night; others, that the dream only occurs during the moment that you are awaking from sleep. Lavalette, when a prisoner in the Bastile under sentence of death, mentions a circumstance relating to himself which seems to confirm the latter view. He heard the clock of the Palace of Justice strike twelve at midnight, when the gate opened to relieve the sentry. Then he fell asleep, when an extraordinary dream took place. He was standing in the Rue St. Honoré, when a low and uncertain sound arose, and he perceived at the bottom of the street, and advancing towards him, a troop of cavalry, all flayed, holding torches in their hands. Pale and dishevelled women appeared and disappeared alternately at the windows; low, inarticulate groans filled the air. The horrible troop continued passing in a rapid gallop, their march past continuing for *five hours*. They were followed by an immense number of artillery wagons full of bleeding corpses. Then Lavalette suddenly awoke by the iron gate of the prison being shut with great force. He made his repeater strike. It was no more than midnight; so that the horrible phantasmagoria had lasted no more than *two or three*

minutes,—that is to say, during the time necessary for relieving the sentry and shutting the gate. The next day the turnkey confirmed his calculation.*

We have heard of another case, where it was found necessary to have mustard poultices placed upon the soles of a patient's feet. During the smart of this little operation, the patient dreamt of his being taken prisoner by the Arabs and marched for long distances through the desert, during which he felt the smart sting of the burning sands. The torture seemed to him to last for years; and at length he was relieved, being awakened after three or four minutes by the mustard poultices being taken off his feet.†

Habit has a great influence upon sleep. Sailors and soldiers can sleep when they will, and awake when they will. The Emperor Napoleon could sleep when he chose. Captain Barclay, the great walker, fell asleep the instant he lay down. The celebrated General Elliot (known for his defence of Gibraltar), did not sleep more than four hours out of the twenty-four; but he was strikingly abstinent, and lived upon bread, water, and vegetables. Lord Brougham was able to sleep whenever he had an odd hour, half hour, or even a quarter of an hour to spare. It greatly increased his capacity for exertion.‡ Like Fénelon, Brougham found rest and relief in change of work. "Le changement," said Fénelon, "des ètudes est toujours un délassement pour moi."

Members of Parliament, from their late and irregular hours, have much need of snatches of sleep. Pitt could

* Lavalette (Comte), *Memoires et Souvenirs.*

† This circumstance was related by Dr. Fletcher in his lectures on Physiology at Edinburgh.

‡ It is related of Lord Brougham that he once worked, read, pleaded, etc.—for five days and nights consecutively; then rushed down to his country house, slept Saturday night, all Sunday and Sunday night, and was ready for business on Monday morning. Such superhuman feats are hardly within the grasp of men of the present generation.

sleep when he chose; though, during Parliamentary debates, he had usually one ear open. While Lord North was virulently assailed by an antagonist, a member exclaimed, "The Premier is asleep!"—"Not so," said the first lord, languidly opening his eyes; "but I wish to heaven I were." Some men, like Brougham, possess the happy gift of sleep. They throw off at once their cares and anxieties, their studies, their professional occupations, their business speculations, just as they throw off their clothes, and sleep soundly and profoundly. Montaigne says of Scipio that he was a great sleeper, and that it was the only fault that men found in him. Montaigne said of himself: "Sleeping has taken up a great part of my life, and I yet continue at the age I now am (about fifty-five), to sleep eight or nine hours together."* Montaigne further relates of Alexander the Great, that he slept so profoundly on the morning of his great battle with Darius, that Parmenio was forced to enter his chamber and call him several times by his name.†

Mr. Croker has pleasantly maintained that it is impossible to be a great man without being a good sleeper,—his favorite examples being Napoleon, Pitt and Wellington. These men possessed the gift of sleep, and could compose themselves to slumber almost at will; thus economizing and increasing their capacity for work. Wellington's biographer says of him: "Indeed he seemed to have the faculty of sleeping whenever he chose; and it was one unbroken slumber with him, when in health, from the time he laid his head on his pillow until he rose again. It is said of him that when one of his lady friends expressed surprise that he should continue to make use of a bed (his old camp-bed), on which there was no room to turn, his

* Montaigne's *Essays*: "Of Experience," book iii. chap. xiii.

† *Ibid*; "Of Sleep," book i. chap. xliv.

answer was: 'When one begins to turn in bed it is time to get up.'" *

Lord Palmerston also possessed the power of throwing off the cares of office, and falling sound asleep. Even in the House of Commons he had many a comfortable nap: indeed, he was spoken of there as "the great sleeper." It was thus that he was enabled lightly to bear the burdens of office to the very threshold of eighty-two years. James Watt fortunately possessed the power of sleeping at will. But for this, he would probably never have invented the condensing steam-engine. He sometimes slept from nine to eleven hours by night, besides taking occasional naps during the day; and though of an originally feeble constitution, he contrived to live to the age of eighty-three, preserving his power of invention to the last. "He vas a gut sleeper," said Washington Irving of the Dutchman in *Rip van Winkle*, and the words were engraved upon his tombstone. He who does not sleep is in a fair way of becoming insane. To keep a man perpetually awake was one of the tortures of the Inquisition, and it never failed of its effect.

How to ensure sleep has become a matter of speculation. Some think early rising is a sovereign remedy:—

> "Early to bed and early to rise,
> Is the way to be healthy, wealthy, and wise."

Some, however, adopt artificial methods. One tries to sleep by repeating the multiplication table; another repeats some bit of well-known poetry. A missionary troubled with sleeplessness repeated the Lord's Prayer till Satan sent him to sleep to get rid of it; and he says that he never found the receipt to fail. Another looks at an imaginary point, and follows it far off in the distance, thus inducing the hypnotism of Braid. Some, like Dr. Franklin, believe in the air bath, and others in the pillow of hops.*

* Gleig, *Life of Wellington* (edition 1864), p. 427. See also *The Croker Papers*, edited by Jennings, ii. p. 312.

The late Archbishop Whately was a hard brain-worker and required a compensating amount of sleep. He knew very well that the brain weakens under continued and protracted labor, especially at night. Accordingly, he adopted a method of ensuring rest and sleep. One wintry day a medical friend accompanied Dr. Field to the archbishop's house at Redesdale, Stillorgan. The ground was covered with two feet of snow, and the thermometer was down almost to zero. As the couple of doctors passed, they saw an old laboring man felling a tree, while a heavy shower of sleet drifted pitilessly on his wrinkled face. One of them thought, what a cruel master that man must have.

* The following is the method of procuring sleep, according to Dr. Binns, in his *Anatomy of Sleep*. Dr. Binns says the discovery is due to Mr. Gardner:—

"*How to procure sleep.*—Let him turn on his right side; place his head comfortably on the pillow, so that it exactly occupies the angle a line drawn from the head to the shoulder would form; and then, slightly closing his lips, take rather a full inspiration, breathing as much as he possibly can through the nostrils. This however, is not absolutely necessary, as some persons breathe always through their mouths during sleep, and rest as sound as those who do not. Having taken a full inspiration, the lungs are then to be left to their own action; that is, the respiration is neither to be accelerated nor retarded. The attention must now be fixed upon the action in which the patient is engaged. He must depict to himself that he sees the breath passing from his nostrils in a continuous stream; and the very instant that he brings his mind to conceive this apart from all other ideas, consciousness and memory depart, imagination slumbers, fancy becomes dormant, thought subdued; the sentient faculties lose their susceptibility; the vital or ganglionic system assumes the sovereignty; and, as we before remarked, he no longer wakes, but sleeps. The train of phenomena is but the effort of a moment. The instant the mind is brought to the contemplation of a single sensation, that instant the sensorium abdicates the throne, and the hypnotic faculty steeps it in oblivion."

Another method was that adopted by Dr. Southey. To James White he said: "Follow my practice of making your latest employment in the day something unconnected with its other pursuits, and you will be able to lay your head upon the pillow like a child."

The other said: "That laborer, whom you think the victim of prelatical despotism, is no other than the archbishop curing himself of a headache. When his Grace has been reading and writing more than ordinarily, and finds any pain or confusion about the cerebral organization, he puts both to flight by rushing out with an axe, and slashing away at some ponderous trunk. As soon as he finds himself in a profuse perspiration he gets into bed, wraps himself in Limerick blankets, falls into a sound slumber, and gets up buoyant."

But what shall be said of those who not only do not invite sleep, but, in their ardor for brain-work, take steps to prevent it. Some take coffee, others tea, ardent spirits, or opium. Mr. J. C. Loudon, while writing his *Encyclopædia of Cottage, Farm, and Villa Architecture*, took strong doses of coffee to keep himself awake. His wife joined him in his literary efforts. "The labor," says Mrs. Loudon, "that accompanied this work was immense; and for several months he and I used to sit up the greater part of every night, never having more than four hours' sleep, and drinking strong coffee to keep ourselves awake." Notwithstanding a severe attack of rheumatic fever, which led to anchylosis of his left knee, and severe injury to his right arm, with loss of the use of his hands and fingers, he went on dictating the remainder of his works, and contrived to live to the age of sixty, when he was cut off by inflammation of the lungs.

Coffee has been a great favorite with brain-workers, because of its exhilarating effects upon the mind. Though persons of lymphatic temperament profit by its use, those of an anxious, nervous disposition suffer from it, especially when taken in excess. Coffee was Zimmerman's favorite beverage; but it brought him to a state of deplorable melancholy. "To keep myself awake," said Charles Pongeus, "I take up to ten cups of coffee a day, and I put a pinch of salt into the last to give it greater activity." But a stroke of blindness interrupted his studies, and soon terminated the test of how much his over-worked brain could accomplish.

Michelet rose at six in the morning, drank coffee, and began his work. He worked for six hours, drinking coffee at intervals. He says it sustained him. "No!" says Deschanel, "it ran away with him. We feel it in his style—full of flashes, but also of feverish jerks." * Michelet himself attributed the revolutionary spirit of the eighteenth century to the consumption of coffee, and the cloudy condition of the French mind in these later years to the increasing use of tobacco.

Claude Bordelieu, the celebrated young physician—who ought to have known better, though physicians are as reckless of their lives as other men—drank coffee in large quantities to keep him awake and enable him to pursue his studies; and then, sleeplessness being established, he took opium to send his brain to rest. But no constitution could stand such a strain, and the brilliant physician died at a comparatively early age.

Tea is another wakener-up; perhaps it is more stimulating to the brain than coffee. Dr. Johnson largely indulged in tea; sometimes drinking as many as twenty cups at a sitting,—though cups in those days were but small. Mrs. Piozzi relates that she sometimes sat and made tea for him until four o'clock in the morning. Although Johnson knew it not, his excessive tea-drinking was probably in a great measure the cause of his sleeplessness and nervous tremulousness.† At one time Johnson drank spirituous liquors,

* Emile Deschanel, *Physiologie des Ecrivains et des Artistes*, p. 172.

† "A kind of chronic narcotism, the very existence of which is usually ignored, but which is in truth well marked and easy to identify, is that occasioned by habitual excess in tea and coffee. There are many points of difference in the action of these two sub-