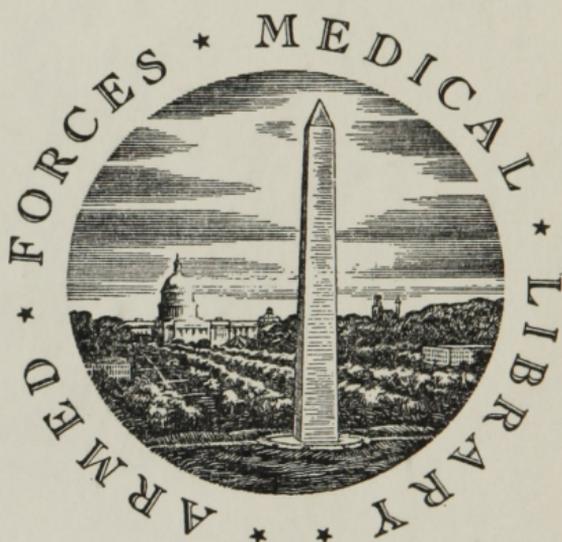




UNITED STATES OF AMERICA



FOUNDED 1836

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WASHINGTON, D.C.





AN  
INAUGURAL DISSERTATION  
ON THE  
CAUSES AND EFFECTS  
OF  
S L E E P.

SUBMITTED TO THE EXAMINATION OF THE  
REV. JOHN EWING, S. T. P. PROVOST,  
THE  
TRUSTEES AND MEDICAL PROFESSORS  
OF THE  
UNIVERSITY OF PENNSYLVANIA,  
ON THE SEVENTEENTH DAY OF MAY, 1796,  
FOR THE DEGREE OF  
DOCTOR OF MEDICINE.

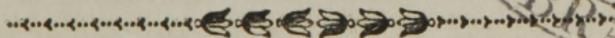
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BY THOMAS BALL, OF VIRGINIA,  
MEMBER OF THE PHILADELPHIA MEDICAL SOCIETY.

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Tir'd Nature's sweet Restorer—BALMY SLEEP!

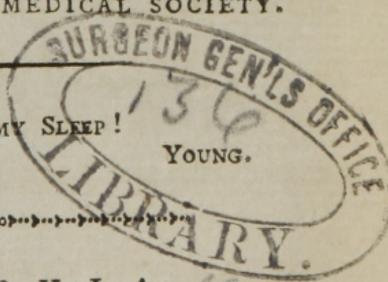
YOUNG.



PHILADELPHIA: 1796

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M.DCC.XCVI.



DISSERTATION

ON THE NATURE AND EXTENT OF THE

S. M. E. P.

UNIVERSITY OF PENNSYLVANIA

ON THE NATURE AND EXTENT OF THE

UNIVERSITY OF PENNSYLVANIA

TO

DOCTOR WILLIAM DAVIS,

OF VIRGINIA:

AND TO

DOCTOR BENJAMIN SAY,

FELLOW OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA,

CORRESPONDING MEMBER OF THE MEDICAL SOCIETY  
OF LONDON, &c.

GENTLEMEN,

**I**N dedicating this Dissertation to you, I at once follow the strong impulse both of duty and inclination. Receive, therefore, my grateful acknowledgments for the kind attention and useful instruction that I have received from both; and be assured, that

D E D I C A T I O N.

what medical knowledge I may possess, the sources from whence it sprung cannot be effaced from my recollection; nor shall my humble supplications be wanting to the throne of mercy for your health, prosperity, and future happiness. I am,

With due Respect,

Your much obliged, and

Very affectionate Pupil,

THOMAS BALL.



## INTRODUCTION.

**W**HEN I survey the wonderful works of our Creator—I view with pleasure the various productions of the vegetable and mineral kingdoms.

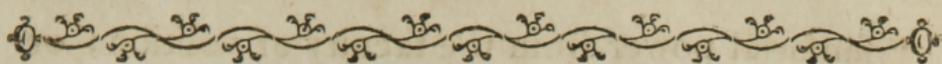
WITH silent astonishment, I behold the order, magnificence and splendor of the heavenly bodies—but, at the sight of man, I almost forget every other part of the creation, and gaze in ignorant silence on him alone—especially, when I think on what a slender thread human life is suspended, and how very easily it may be divided—when I recollect how very complicate his wonderful machine is, and how easily disorganized—when I view the many accidents that might befall him, from the time of conception to his birth—the innumerable dangers that he is exposed to from infancy to manhood—the ills that await him—the dangers that surround him—and the pains and diseases which attend him during his whole life—I am lost in inquisitive amazement,

and think it a wonder, that man should ever live as many days as he does years—when we recollect that the outlets to human life are so very numerous, so wide, and so very unguarded; and, how few, straight and narrow the paths of good health—nothing less than that Omnipotent Power, which first created us, could possibly conduct us through life's dark and dangerous road:—yet if the Lord is with us who can be against us?

“ Yea, though I walk through the valley of the shadow of death, I will fear no evil, for thou art with me.”\*

IN compliance with the rules of this university, I submit (though with diffidence) to the examination of the medical professors, AN INAUGURAL DISSERTATION, ON THE CAUSES AND EFFECTS OF SLEEP, hoping the intricacy and darkness of this metaphysical and physiological subject will procure me the indulgence, both of the medical faculty and of the public, for its imperfections.

\* Psal. xxiii. ver. 4.



AN  
INAUGURAL DISSERTATION  
ON THE  
CAUSES AND EFFECTS  
OF  
*S L E E P.*

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CAUSES OF SLEEP.

**S**ALUTARY sleep depends on the excitement being raised, until a certain degree of indirect debility is produced.

“ As the immediate cause of sleep consists in a  
“ suspension of volition, it follows, that whatever  
“ diminishes the general quantity of sensorial  
“ power, or derives it from the faculty of volition,  
“ will constitute a remote cause of sleep; such  
“ as fatigue from muscular or mental exertion,  
“ which diminishes the general quantity of sensorial  
“ power; or an increase of the sensitive motion,  
“ as by attending to soft music, which diverts the

" sensorial power from the faculty of volition; or  
 " lastly, by an increase of the irritative motion, as  
 " by wine, or food, or warmth, which not only  
 " by their expenditure of sensorial power diminish  
 " the quantity of volition, but also by their pro-  
 " ducing pleasurable sensations (which occasion  
 " other muscular or sensorial motions in conse-  
 " quence) doubly decrease the voluntary, and thus  
 " more forcibly produce sleep."\*

SLEEP may be produced by excessive direct or  
 indirect debility; but such sleep is not salutary or  
 refreshing, but what is termed morbid.

" SLEEP then is the effects of the actions of  
 " the day at first giving always more and more  
 " excitement, but less and less in proportion to  
 " the continuance of the operation, but in such  
 " sort as always to add some excitement, till the  
 " matter at last comes to a point where the degree  
 " of excitement necessary to constitute the waking  
 " state no longer exists."†

THIS state of indirect debility, which consti-  
 tutes refreshing sleep, is commonly produced by  
 the action of the various stimuli through the course

\* Doctor Darwin's Zoonomia, page 235.    † Brown's  
 Elements of Physiology, page 12.

of the day on the different senses, wearing down the excitability and raising the excitement to the sleep-giving point.

PARTICULAR pleasing sounds have the effect of producing sleep; such as the gentle tumbling of water over a cascade, the long continued sound of the falling of rain on the house, the buzzing of bees, vocal and instrumental music, and many other things that fix the attention for some time, so as to prevent it from changing to any other object, all constitute remote causes of sleep, and produce the effect in the same way that fatigue from muscular motion does, that is, by wasting the excitability and raising the excitement to that degree of indirect debility, which alone can give calm and refreshing sleep.

I CANNOT pass by the causes of natural sleep, without taking some notice of the power of habit in producing it. So great is its influence in sleep, as well as in all other things, that it has been justly termed a second nature; for instance, tobacco, that powerful narcotic and noisome weed, by use, becomes inoffensive, and, by long habit, even a luxury.

WE know that, by a continued use, our most  
B

powerful medicines lose their effects in a great measure, as we daily see in practice. In giving of opium we are oft obliged to increase the dose as we continue the use of it, or we fail in the wished for effects.

ONE grain of opium would have a greater effect on me, who have never taken two grains in my life, than one hundred would on Doctor Bouchiè,\* a French physician, who has taken as much as one hundred grains of opium and a pint of æther a day; here the very large quantity of one hundred grains of opium, by habit, became too little to ease the pains of a colic; for, in conjunction with it, he was obliged to take as much as a pint of æther also to procure ease to himself.

DR. SAY informed me that he had a patient who kept opium by her bed-side, and chewed it until ease was obtained, which sometimes was to a considerable quantity; and another who takes from ten to fifteen teaspoons-full of liquid laudanum in a day, having been long in the habit of using it.

I COULD mention many other instances of the surprizing power of habit; but I take it for grant-

\* A case related by Dr. Rush, in his lectures.

ed, that those already mentioned will be sufficient to convince the impartial reader; if they should not, I must request him to recollect for a moment how many things he does daily, almost entirely owing to the force of habit, viz. we eat two, three, or four times a day. If we go to sleep for two days, at a certain hour, we are sure to be sleepy on the third day, at the same time.

FARTHER, so great is the power of habit, that the miller does not find it difficult to sleep, while the mill is grinding, without being awaked by the noise. Dr. Zimmerman observes, that “the soldier sleeps, even amidst the thunder of cannon.”

I DO not wish to be thought here to insinuate, that sleep depends alone on habit—no—I only wish to take this good opportunity of observing, how very cautious mankind ought to be of getting into any idle or injurious habit, since we see and know, how great and how irresistible is the power thereof.

IN health we are not sensible of the good effects of sleep; but who has not experienced its health restoring, life prolonging effects, after having been denied its sweet repose for two, three, or four days together, by an acute disease, or some

other sleep forbidding cause? It appears to me that there is no part of our existence in which we enjoy more pleasure, and from which we derive more beneficial effects, than we do from sleep, and yet I may say that there is no part, in which mankind in general are not as well or better acquainted with themselves, than what they are during this state.

I MAY here observe, that although natural sleep is produced by the stimuli acting on the excitability, in such a manner as to diminish that and to raise the excitement to that degree which affords refreshing sleep; yet if these be too long continued and in too violent a degree, the excitement will be raised above the sleeping point, and must be reduced before salutary and refreshing sleep can be obtained. This must be done by giving of sedatives just strong enough to reduce the accumulated excitement to the natural sleeping point, or by using sedatives more powerful, and at once reducing the system into excessive direct debility, which produces morbid sleep of the most dangerous kind. I may further add, that an excess of the same cause that produces sleep will produce its opposite state, viz. watchfulness.

I HAVE before observed, that sleep may be and oft is produced by very different causes; it is likewise attended with very different effects, as I shall shew hereafter when speaking of the effects of sleep.

HITHERTO I have only mentioned the natural causes of sleep. I shall now proceed to mention others that are very different, but that are indispensably necessary to be used at times: these are first, stimulants; second, sedatives. First, of stimulants: when the excitement is too low to admit of natural sleep, no matter whether it proceeds from the loss of a great quantity of blood, or excessive evacuations of any kind; from cold or any other cause, we must give stimulants, weak in proportion to the diminished excitement, to raise it to that point which alone gives salutary sleep; when the system is much below that degree, it produces morbid sleep, the effects of which tend to death. The stimulants most commonly made use of are the following, viz. opium, æther, alcohol, ardent spirits, wine, moderate heat, warm bathing, nourishing diet, stimulating drinks, &c. If the excitement is very low, we should begin with the weaker stimulants, or with but very small doses of the more powerful; but the good judgment of the practitioner will al-

ways, in such cases, determine which is best to be given to obtain natural sleep, from that which is morbid.

IF the excitement was but a little below the sleeping point, a very weak stimulus would be sufficient. I have known five drops of laudanum procure sleep, when forty would not: this is easily accounted for in this way; if the excitement was but a little below the sleeping point, five drops would raise it just high enough, whereas forty would raise it much too high. It is in this way that so many blunders have been made, and so much mischief done by ignorant pretenders: if they feel the pulse, they cannot tell whether the excitement is too high or too low; they are as apt to give laudanum when the excitement is too high as at any other time. I once knew a man made completely insane by the continual exhibition of laudanum in small doses, when his excitement was much too high (by the directions of an ignorant pretender) and it was given to procure sleep, the most effectual way in the world to prevent it—had he taken sixteen or eighteen ounces of blood, instead of giving six or eight drops of laudanum, he would have found this a much more powerful anodyne than laudanum to procure refreshing sleep.

HAVING now finished, as briefly as possible, the causes of sleep from direct debility, with some directions how to change morbid sleep into natural and refreshing, I shall proceed to mention the causes from indirect debility.

I AM now to speak of the sedative causes of sleep. These are much more numerous, at least much oftener used, than stimulants, because the diseases that require them are much more prevalent, in this our variable climate, than the others.

SEDATIVES are used to induce sleep only when the excitement is accumulated, or raised above the sleeping point, as it is in most inflammatory diseases, such as pleurisy, rheumatism, &c. In many cases the skill of the physician is required to determine whether there is an accumulation of excitement or not; if any difficulty occurs, the pulse, which is the dial plate of the system,\* must be attended to. This is the most unerring guide, and the only true prognostic in all febrile diseases. By the pulse alone the experienced will be able to determine, whether there is an excess or deficiency of excitement; if there is an excess it must be diminished, so as to restore the system to that point which alone gives saluta-

\* Dr. Rush, in his lectures.

ry sleep. The remedies that are to be made use of, are such as produce sedative effects: the most effectual for this purpose that I have ever seen, are,

FIRST, Blood-letting. This should be preferred to all other depleting remedies; because we have it more under command than any other. We can open a vein at any time, take as much as the case requires, or as our judgment directs; which may be known by feeling the pulse previous to venesection, and by keeping our fingers on the pulse while the blood is flowing; by doing this we judge rightly of the quantity to be taken, by the pulse becoming softer and by the abatement of symptoms, such as pain, &c. but in order to effect this, sometimes in very violent cases I have seen it necessary to bleed as oft as four, five, or even six times, before the excitement would be sufficiently reduced to admit of sleep; but in less violent cases I have seen one bleeding act like an anodyne.

SECOND, Purging. This acts nearly in the same way that blood-letting does, by depleting; but there is this disadvantage attending it, we have it not so much under our command as blood-letting, and if one will answer, we should prefer

venefection—but we oft find it necessary to use both, and with the happiest effect, in reducing the accumulated excitement to the sleeping point.

**THIRD, Vomits.** These have the same effect, though they do not operate the same way exactly that a purge does, though they both deplete, if the evacuation is to be made from the stomach instead of the bowels, as is often the case; emetics answer best and frequently act like an anodyne.

**FOURTH, Clysters.** These are oft used with bloodletting, when it is improper to give purges, and they are oft used by themselves, with very good effects, where there is an irritation in the rectum from any cause; or where the excitement is but little too high, these act as all other depleting remedies, though in a less degree than many others.

**FIFTH, Cold bath.** This has sometimes very wonderful effects in reducing the excitement, and keeping up an equilibrium in the system.

**SIXTH, Cool air and cool subacid drinks.** I have sometimes seen these effectual in reducing the excitement, and causing sleep, when there has

been but a very small accumulation of excitement.

SEVENTH, Cold local applications, such as ice, or cloths dipped in cold water, or vinegar and water, and applied to parts partially affected, such as affections of the head, or other local inflammations. I have seen these attended with very good effects, in taking down the excitement and inducing sleep.

EIGHTH, Blisters have been very serviceable, when applied to parts locally affected, in reducing the system to the sleeping point.

NINTH, The sedative passions, such as fear, grief, &c. all act the same way that other sedatives do; that is, by reducing the excitement and procuring sleep.

TENTH and LAST, Salivation. This may be used with advantage when most of the others have failed. I think there are very few in the practice of the healing art, who have not seen the good effects of mercury. Dr. Rush has called it the Sampson of the Materia Medica, and I think with propriety. But it is chronic cases that call for this remedy mostly; in but few others should it be used, especially when the lancet,

which is a certain specific for accumulated excitement, can be employed.

I HAVE now mentioned (in as few words as the importance of the subject would admit) the natural and artificial causes of sleep, I shall next take some notice of the sleep of children, and then proceed to the cause of vegetable sleep.

“ THE reason why children sleep so much, has  
 “ been supposed to be owing to their want of  
 “ reflex sensation. May not the phænomenon  
 “ of sleep in children, be explained upon other  
 “ physical causes and not upon the want of reflex  
 “ sensation? That the excitability of children is  
 “ more abundant, cannot or will not, I imagine,  
 “ be denied, and from this I may justly infer,  
 “ that the waking and sleeping state of children,  
 “ do more easily run into each other than they do  
 “ in adults: their excitability, therefore, is more  
 “ susceptible of the action of stimuli of every kind,  
 “ and the sleep-inviting point is consequently pro-  
 “ duced or brought on sooner in children, by  
 “ fewer causes in a given time, than in adults.”

It appears to me probable, that the want of reflex sensation in children is a powerful cause of their sleeping so much: at this early period, their abundant excitability is powerfully wrought on

by the weaker stimuli, which soon raises their tender excitement to the sleeping point; and as they have no reflex sensation, there is little or no counter action in their system: they at once sweetly fall away into that pleasing, death-like state, called sleep.

By the time they begin to acquire reflex sensation, they are capable of using exercise, either of crawling or walking, the fatigue of which makes up for the former want of reflex sensation, and sleep is still produced. We may observe, that their little minds, at this early period, are incapable of thinking long on any one subject; hence the reason why they change their amusements so often; and as every new amusement adds a new stimulus to the mind, the excitability is worn down in proportion as the excitement is raised, until it ascends to the sleeping point. We may further observe, that as they advance in life, and as their excitability becomes lessened and insensible to the weaker stimuli, they are presented with more numerous and more powerful ones, such as ambition, pride, love, and avarice.

## OF VEGETABLE SLEEP.

**S**LEEP is a function inherent in all living matter, and, for ought we know, may be attended with similar effects in all. May not the sleep of vegetables depend on the same cause that it does in animals, viz. indirect debility.

WE know that vegetables in general possess most irritability in the morning—man's excitability is greatest at the same time. Vegetables sleep most in the spring, which is the morning of their lives, because their irritability at this time is most abundant.—Man also sleeps most at the commencement of life: for at this time I suppose his excitability is in the highest degree possible, to admit of good health; and also at this time being so very easily acted on by any stimulus, it is much sooner wasted and the excitement raised to the sleeping point, and by this death-like state it is again accumulated for the necessary purposes of life.

I SUPPOSE this to be the case with vegetables; in the morning their irritability is much greater than in the afternoon or evening, because it is dissipated by the action of the stimuli through the

course of the day; but during the silence of the night, all stimulus being withdrawn, they sleep, and during that state of repose their irritability is accumulated, which is again wasted by the action of stimuli the succeeding day; such as light, heat, air, their voluntary and involuntary motions (which are very remarkable in some vegetables, viz. *Mimosa*, *berberis vulgaris*, *cistus helianthemum*, &c.) all which assist in wasting their irritability, and reducing them to that degree of indirect debility which constitutes salutary sleep.

“ WE may lay it down as a pretty constant and  
 “ certain axiom, that the sleep of vegetables is  
 “ more or less profound in proportion to their vi-  
 “ gour or debility. During the continuance of  
 “ this sleep the appearance of the plants is so  
 “ much changed, that the most experienced bota-  
 “ nist is sometimes at a loss to know them, without  
 “ a very minute examination, though at any other  
 “ time the plants would be quite familiar to him.”\*

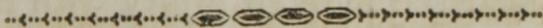
But as great as the difference is, in vegetables, between the sleeping and waking states, in man, that difference is far greater.

\* Dr. Benjamin S. Barton, professor of *Materia Medica*, *Natural History* and *Botany*.

IF we view man while awake and in action, his figure is majestic—his actions pleasing—his speech communicative—and his countenance portends something heavenly and divine.

BUT if we view him while asleep, how greatly is the scene changed! his majesty is flown—his actions ceased—his speech has failed—his countenance, the index of his very soul, is now neutral—and his sparkling eyes, half equal to his tongue for expression, while awake, is now closed in death-like darkness.

“THE connection of causes and effects traced  
 “ in the vegetable world, and compared with those  
 “ of the animal kingdom, point out the striking  
 “ analogy between the two, and proclaim that  
 “ nature is uniformly the same in all her works.”



#### EFFECTS OF SLEEP.

THE effects of sleep may be divided into good and bad. I shall begin with the good, and point out its effects,

FIRST. To the foetus in utero.

SECOND. The good effects of sleep to infants.

THIRD. I shall mention the good effects of sleep, both to children and adults, in preserving health.

FOURTH and LAST. Its good effects in restoring health, when lost.

FIRST. Of the good effects of sleep to the foetus in utero.—I hope that it will not be thought presumptuous in me to suppose that the foetus in utero passes nearly the whole time of its gestation sweetly encircled in the soft arms of balmy sleep: that during the three or four first months of its conception it does not awake once. I suppose that, until this time, the liquor amnii is so mild and bland as not to give the least irritation to the tender embryo of human nature, which is as yet unable to bear the slightest injury with impunity; that after the third or fourth month the liquor amnii, or something else, does irritate the foetus so as to rouse it for a moment from its lethargic state; but, happily for it, it soon falls away again into its former state of insensibility—that state intended by Providence as most suitable for its ease and most favourable for its growth. In this

way I suppose the fœtus continues; until weary of being so long in one position, it is again roused by the stimulus of its uneasy posture, it moves, and instantly returns to its former destined state; happy for it, indeed, that its sensibility is thus suspended by sleep, or it would have more to suffer than its little nature could bear. This is the way in which I suppose the fœtus goes on, waking oftener as it advances to the time appointed for its change of place and mode of existence.

WE appear to enter life through the doors of sleep, and in natural death make our exit the same way: out of sleep we have awoke into time; and out of sleep we shall awake in eternity.

SECOND. I am now to mention the good effects of sleep to infants; that is, after their births.—Here indeed, at this early period of life, human nature, in undergoing so great a change, stands in need of the fostering hand of a supreme being to shield their tender bodies from external injuries, which are as yet so exquisitely sensible—and what could have been found out to answer the purpose better than sleep? By this they are at once defended and refreshed. It moderates all the tumultuous motions in the human body.

“ THUS the heart is gradually restored, from  
 “ its quick and almost feverish pulsation, to the  
 “ slow and calm condition we find it in the  
 “ morning; the breathing, in sleep, becomes  
 “ slower and smaller, the peristaltic motion of the  
 “ stomach and intestines, the digestion of the  
 “ aliment, the sense of hunger, and the progres-  
 “ sion of the fæces, are all diminished at the  
 “ same time; the thinner juices move more slow-  
 “ ly on, while the more gross and sluggish are  
 “ collected together; and the fat being poured  
 “ out is accumulated in the cellular substance;  
 “ the viscid, alluminous humours, for the nou-  
 “ rishment of the parts, adhere more plentifully  
 “ to all sides of the fibres and small vessels; the  
 “ consumption of the spirits, the attrition of the  
 “ blood, and the quantity of perspiration, are all  
 “ diminished. Thus, while the quantity of the  
 “ nervous spirits continues to be secreted, with  
 “ less consumption, it is by degrees accumulated  
 “ in the brain, so as to fill and distend the  
 “ collapsed nerves, that both the internal and  
 “ external organs return to action by the approach  
 “ of some small stimulus, by which they are re-  
 “ stored to vigilance.”\*

\* Haller's Physiology.

THIS is the time in which I suppose animals to grow, most particularly young ones; because during sleep the secretory organs perform their respective functions; and as all volition and voluntary motion is suspended, of course there cannot be so great a consumption of the secreted fluids, during the refreshing moments of balmy sleep; consequently more must go to the nourishment and growth of the body, especially during the infantile state, as there is less muscular motion and mental exertion, and more sleep, than at any future period of life.

THIRD. I am now, in the third place, to mention the good effects of sleep, both to children and adults, in procuring health. Few, very few, I believe, arrive to the years of knowledge who are not sensible of its good effects, especially after much fatigue either of body or mind. As the hungry soul seeketh food, and as the thirsty panteth for the cooling streams, so the wearied soul seeketh rest and refreshment from the downy bed of balmy sleep; she findeth it and thereby health is preserved.

THE wearied body of the playful child, or the industrious labourer, would soon grow sick and

faint, if it was not for the restorative power of sleep.

THE good effects of sleep are not confined to the body alone; but it extends its heavenly influence also to the mind—and here let us for a moment pause, and contemplate the good effects there produced. The mind that refused to recollect or ever to think at all, while the body was languid for the want of refreshing sleep, as soon as it has been gratified with it, appears to be at once endued with new powers of almost every kind.

SLEEP, like many other blessings of heaven, if rightly and moderately used, is a source of much pleasure and of great good; but if misused and misapplied may be and is the cause of much evil.

FOURTH. I am now, in the last place, to speak of the good effects of sleep in restoring health, when lost. Such is the nature of our constitutions, that whatever is habitual, nature accommodates herself to, and at length it becomes, as it were, natural to us; so that we cannot break off suddenly from any one habit with impunity, nei-

ther can we suddenly take up any one, without risking the same. As sleep is both natural and habitual to us, of course there must be a greater danger from wandering out of that path which nature hath pointed out, and which habit hath made us acquainted with. This we are sensible of by experience; if we pass twenty-four hours without sleep, as we are accustomed to spend a part of that time in that pleasing state, we suffer from it both in body and mind, in a small degree; but if we pass the succeeding twenty-four hours likewise without it, we are much more sensible of the loss of sleep; our bodies feel dull, our heads ache, our appetites fail, our ideas are darkened, our imagination clouded, and our judgment weakened; in short, our whole bodies are disordered. In all such cases, natural, salutary sleep is the only true specific for us.

IF from fatigue of body or mind, nature stands in need of the cordial power of balmy sleep, to restore us to our wonted health; and if, in many other cases, sleep appears to act like a charm in dispersing indisposition and restoring health; I need scarcely hint how much may be learned from a patient, during sleep, by an attentive and skilful physician,

WE may sometimes learn more of the true state and every cause of the disease, during sleep, by an attentive observation, than we can at others by inquiry while awake. How indispensably necessary then must it be, for every physician, to be well acquainted with the appearance, &c. of patients in different diseases, as well as in health, while asleep?

“ SOUND and uninterrupted sleep refreshes the body and mental powers, by accumulating or bringing back the greatly wasted excitability, to the stimuli of the preceding day, and preparing or fitting it for the operation of the exciting powers, of the succeeding day.”

HAVING now enumerated, as briefly as possible, the good effects of sleep, I shall proceed to mention the bad effects. First, in health. Second, in sickness.

SLEEP, when continued long, induces debility, and this predisposes to diseases; for we know that the system is much more liable to disease, when debilitated by any cause; and we find by daily observation, that sleep, when continued long, always induces debility. Hence the rea-

son why diseases attack so much oftener in the night than in the day, particularly inflammatory diseases : and in general, they attack in the latter part of the night, or in the morning, when sleep has ceased to be refreshing and invigorating, but, on the contrary, is morbid and debilitating.

“ SLEEP, continued for too great a length of  
 “ time, disposes to all the disorders that attend a  
 “ slow circulation ; to fatness, drowsiness, weak-  
 “ nesses, and cachexies ; and is, at the same time,  
 “ highly detrimental to the memory.” I doubt  
 not but that sleep, too long continued, has oft  
 been the cause of fatuity and idiotism.

I IMAGINE that six or seven hours of sleep at farthest is a sufficient length of time for an adult. I rather suppose, that sleep is seldom refreshing, when continued longer than that time ; and we know, that as soon as it ceases to be refreshing, by its long continuance, it becomes very debilitating, not only to the body but also to the mind. If mankind were more attentive to their hours of sleep, and would break themselves of the idle and pernicious habit of sleeping ten or twelve hours, as some do, they would enjoy

better health and would be much more useful to community.

No man that sleeps half his time, can ever become eminent in any thing, that will be of advantage to himself or to his country.

I DO not conceive, that mankind, after arriving to the years of knowledge, were ever intended by their Creator, to spend nearly half of their lives in a vegetable state (for man, during sound sleep, is but little more) he was made for a nobler purpose than to spend the half of his life useless to his fellow mortals, useless to his Maker, and useless, nay, ungenerous to himself. I scarce see how it is possible for man, who enjoys good health, to be void of thinking, while the spacious earth and seas, by the light of day, present innumerable resources of knowledge, to the physician, as well as philosopher, for investigation; and the heavens, though veiled in the sable curtains of the night, display dazzling beauties, to this our earth, for the wonder of the ignorant and the observation of the wise.

I AM now, in the second and last place, to mention the bad effects of sleep in sickness.

THE bad effects of sleep, are most evident in diseases of excessive direct or indirect debility; in these cases, the effects of long continued sleep tend to death, by entirely exhausting the excitement.

IN many diseases, patients are apt to sleep very much, this is likewise morbid, and if long continued is highly injurious: they ought not to be suffered to sleep long: they should be waked regularly to take their medicines, and it is sometimes even necessary, to wake them as oft as two or three times of a night, to take some nourishment.

PATIENTS, labouring under the convalescent state of diseases, ought to be very particular as to their sleep, as well as their diet: they should not sleep too much, for that is very debilitating, even in health: they should not set up too late at night, and they should rise early in the morning, for this is the healthiest, as well as the pleafantest part of the day.

IN the morning, the feathered songsters warble forth their enchanting notes to please the ear—the vegetable world mingle their rich odors, and sa-

turate the morning zephyrs, with healthy perfumes to please the nose—and the variety and simplicity of nature please the eye more than all the laboured improvements of art.

THINK of these things, O ye lovers of long sleep! and let them keep you from your pillows late, and let them raise you from your beds early, so shall you enjoy good health, while you view the beauties of nature in full perfection.

THE END.





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