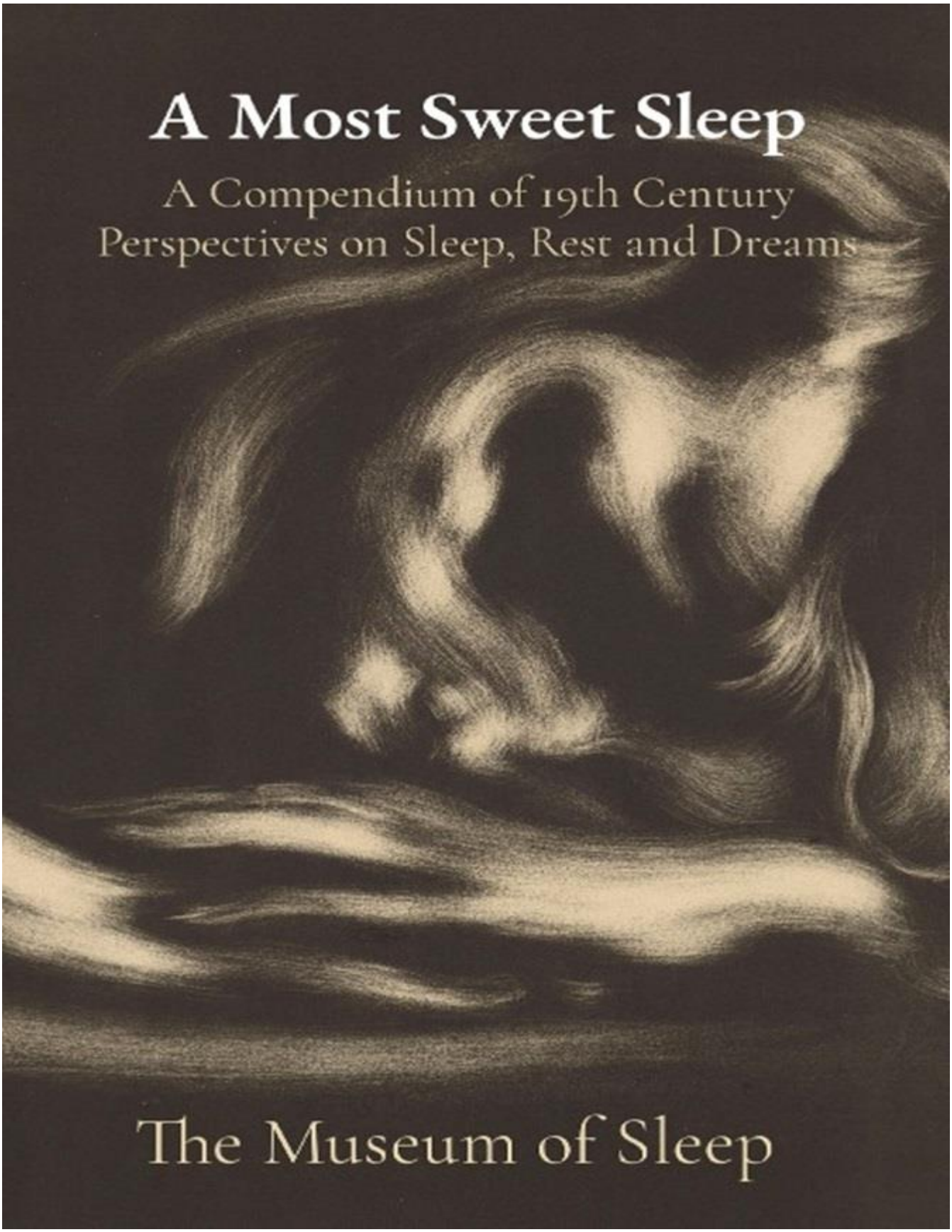
A Most Sweet Sleep
A Compendium of 19th Century Perspectives on Sleep, Rest and Dreams
The Museum of Sleep

A MOST SWEET SLEEP

A Compendium of 19th-Century Perspectives on Sleep, Rest and Dreams

Edited by Dwight Swanson and Jennifer Accardo

The Museum of Sleep

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After the usual labour of the day, a light supper, moderate venery, a most sweet sleep succeeds, which is aided by the darkness and stillness of night.

Dr. Stancliffe

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INTRODUCTION

The 19th century marked a pivotal time in the study of sleep, with new scientific discoveries and advancements in medicine. It is tempting to think of that century as a simpler time, without sophisticated knowledge of the nature of sleep, and all the revelations of modern sleep science in the future. Yet sleep itself—that mysterious and essential part of human existence—had already captivated the minds of thinkers and scientists for centuries, and that intrigue only intensified. Challenges to sleep in the past were the same as in the present: people had a hard time falling—and staying—asleep. This compendium of essays, reviews, case studies, and poems, written by renowned authors and scholars of the 1800s, now mostly forgotten, offers a unique glimpse into prevailing ideas and theories about sleep during that era. From explorations of the physiological processes of sleep to reflections on its psychological and cultural significance, these texts compose a compelling tapestry of perspectives on this universal human experience.

While some of the contents within seem outdated or frankly erroneous by today's standards, they still offer valuable historical context and remind us of the continuous evolution of our understanding of sleep. Vintage scientific documents yield insights into the historical context of sleep research and its evolution over time. We can observe a gradual shift towards a more scientific understanding of sleep, based on empirical evidence and experimental studies. Views on different aspects of sleep emerge, from the belief that it is a time of rest and restoration to the notion that it is a state of altered consciousness. The era's physicians considered the roles of the circulatory and nervous systems in sleep, while psychologists grappled with how waking thoughts impacted sleep and dreams. It is enlightening to see how many writers were proponents of what we now call "sleep hygiene"—the combination of lifestyle habits and sleep conditions that promote uninterrupted sleep. The impact of sleep on imagination and culture is depicted here in a selection of poetry contemporaneous with the scientific research included in this collection.

These essays and poems are deliberately presented without commentary or alteration. The original texts reflect the influence of cultural beliefs and societal norms on sleep habits and practices, as well as stylistic trends in writing and attitudes towards ethnicity, race, and gender. Please note in particular that pharmacological recommendations within are outdated and potentially dangerous.

We have retained the original spellings and punctuation, with only minor changes to what appear to be unintentional mistakes in the original documents. Several of the authors included untranslated foreign phrases in their originals, but for those we have added English translations in brackets. as indicated in brackets.

The selections have been divided into thematic groupings, with essays arranged chronologically within each section: medical and scientific essays (excluding technical papers relevant only to physicians); "Notes on Sleep" (shorter texts that cover a range of topics); longer scholarly essays; poems; a small selection of works of art; and articles from "Hall's Journal of Health". This magazine, founded in 1854, appeared repeatedly in searches for vintage material on sleep, owing to the fact that editor William Whitty Hall and subsequent editors regularly included short, often pithy, suggestions on how to sleep better.

The articles selected are all readily available online in free and public databases, most notably PubMed, JSTOR, the Wellcome Collection, the art collections of the National Gallery of Art, and the J. Paul Getty Museum. The poems were selected from several poetry databases, but primarily from *A Victorian Anthology, 1837-1895* (1895), and *An American Anthology* (1900), both edited by Edmund Clarence Stedman and published by Houghton Mifflin Company. We thank the unnamed archivists and operators of the scanners who have posted the thousands of pages of documents on their websites.

We invite you to embark on a journey through these 19th-century portrayals of sleep, gaining a deeper appreciation for the perspectives that have shaped a modern understanding of this enigmatic phenomenon.

HALL'S JOURNAL OF HEALTH

La Sainte Famille au Sommeil, by H. Bayard and F. A. Renard, about 1853

HOW TO SLEEP

Hall's Journal of Health. Feb. 1854. Vol. 1, No. 2. Pages 43-45.

Sound, connected, early, refreshing sleep, is as essential to health as our daily food. There is no merit in simply getting up early. The full amount of sleep requisite for the wants of the system should be obtained, even if it requires till noon. I go to bed at nine o'clock the year round, and I stay there until I feel rested; but I do not go to sleep again after I have once awaked of myself, after daylight. I remain in bed until the feeling of tiredness goes off, if there is any, and I get up when I feel like it. I do not sleep in the day-time; it is a pernicious practice, and will diminish the soundness of repose at night. Dr. Holyoke, after he was a hundred years old, said, "I have always taken care to have a full proportion of sleep, which, I suppose, has contributed to my longevity." The want of sufficient sleep is a frequent cause of insanity. To obtain good sleep, the mind should be in a sober, quiet frame for several hours before bedtime. I think people require one hour's more sleep in winter than in summer. In connection with this subject, the North British Review illustrates the importance of sufficient sleep on a parallel with the natural history of the Sabbath:—"The Creator has given us a natural restorative—sleep; and a moral restorative—Sabbath keeping; and it is ruin to dispense with either. Under the pressure of high excitement, individuals have passed weeks together with little sleep or none; but when the process is long continued, the over-driven powers rebel, and fever, delirium and death come on. Nor can the natural amount be systematically curtailed without corresponding mischief. The Sabbath does not arrive like sleep. The day of rest does not steal over us like the hour of slumber. It does not entrance us almost, whether we will or not; but, addressing us as intelligent beings, our Creator assures us that we need it, and bids us notice its return, and court its renovation. And if, going in the face of the Creator's kindness, we force ourselves to work all days alike, it is not long till we pay the forfeit. The mental worker—the man of business, or the man of letters—finds his ideas coming turbid and slow; the equipoise of his faculties is upset, he grows moody, fitful and capricious; and, with his mental elasticity broken, should any disaster occur, he subsides into habitual melancholy, or in self-destruction speeds his guilty exit from a gloomy world. And the manual worker—the artisan, the engineer—toiling on from day to day, and week to week, the bright intuition of his eyes gets blunted; and, forgetful of their cunning, his fingers no longer perform their feats of twinkling agility, nor by a plastic and tuneful touch, mold dead matter, or wield mechanic power; but mingling his life's blood in his daily drudgery, his locks are

prematurely gray, his genial humor sours, and slaving it till he has become a morose or reckless man, for any extra effort, or any blink of balmy feelings, he must stand indebted to opium or alcohol."

A sleeping-room should be large and airy, the higher from the ground the better, even in the country; it should contain but very little furniture, no curtains or clothing of any description should be hung up in it, nor should it contain, for a moment, any vegetables or fruit, or flowers, or standing liquids of any kind; nor should there be any carpet on the floor, except a small strip at the side of the bed, so that in getting out of bed a shock may not be imparted by the warm feet coming in contact with the cold floor. The fire-place should be always left open during the day, for several hours; the windows and doors should be left open while the sun is shining, but the windows should be closed an hour or more before sundown. As soon as a person is dressed in the morning, he should leave his chamber; the bedding should be hung on chairs and allowed to air for several hours.

On going to bed, a window should be hoisted several inches at bottom, and, if practicable, be let down as much at top, that, while the heavy fresh air comes in below, the light and foul air may pass out above. As a general rule, it is far best to sleep in rooms where no fire has been burning since breakfast, but there should be bed-clothing enough to keep from feeling chilly. If it is bitter cold weather, with high winds, it may be better to build a moderate fire about dark, but not to let it go entirely out before morning. If there is any fire at all in a sleeping-room, it should not be allowed to go out altogether.

A person should sleep in one garment, a coarse cotton shirt, and no more, without a button, or pin, or string about him. No one, who pretends to common cleanliness, should sleep in a garment worn during the day, nor wear during the day a garment in which he has slept; any garment worn should have six or eight hours' airing every twenty-four hours.

No sleeping-room should be less than eight feet high, nor should it contain, for each person sleeping in it, less than one hundred and fifty feet superficial measure, or about twelve feet square.

To show what a bearing a small deficiency in the action of the lungs has on the health, I present the following calculation, applied to a night's sleep of eight hours:—A person in good health and of medium size will, in that eight hours' sleep, breathe nine hundred gallons of air; but if one-fifth of his lungs are inoperative, he consumes in the same time one hundred and eighty gallons less, and in the course of twenty-four hours, seven hundred gallons less than he ought to do. No wonder then that, when the lungs begin to work less freely than they ought to do, the face so soon begins to pale, the appetite fails, the strength declines, the flesh fades, and the victim dies. Not only are

consumptions traceable to this habitual deficiency of respiration, but rheumatism, colds, chills, ague, bilious, yellow and putrid fevers, suppressions, whites, dyspepsia, and the like. So that, in every view of the case, any method which secures the prompt detection of this insufficient breathing, and rectifies it without delay, should merit and demand the immediate investigation of every lover of the health and happiness of mankind.

William Whitty Hall (1810-1856) was a physician and pioneer editor of health magazines, including *Hall's Journal of Health* (1854-1895). He studied theology and medicine at Transylvania University in his native Kentucky, receiving an M.D. in 1836, and was ordained to the ministry in the Presbyterian church in Houston, Texas. Hall eventually abandoned preaching for medicine and moved to New Orleans and Cincinnati. He established a consultation practice in New York City and published several books on lung ailments.

HOW TO GET UP EARLY

Hall's Journal of Health. Apr. 1854. Vol. 1, No. 4. Page 88.

Place a basin of cold water by the side of your bed; when you first awake in the morning, dip your hands in the basin and wet your brow, and sleep will not again seal you in its treacherous embrace.

This is the advice given by an aged man, who had been in the habit of rising early during a long life. By attending to this advice, you may learn to rise every morning at five o'clock. The Editor has found it to be a better plan to go to bed at one regular hour. Leave your bed the moment you awake of yourself, after daylight; nature will thus regulate the sleep to the exact amount required by the system.

DON'T SLEEP WELL

Hall's Journal of Health. Oct. 1855. Vol. 2, No. 10. Page 241.

Since the fullest amount of sleep is as essential to the healthful working of mind and body as necessary food, it may be well to know how to secure it, as a general rule.

1. Clarify your conscience.

2. Take nothing later than two o'clock, P.M., except some bread and butter, and a small cup of weak tea of any kind, or half a glass of water, for supper.

3. Go to bed at some regular early hour. Get up the moment you wake of yourself, even if at midnight.

4. Do not sleep an instant in the day time. Unless your body is in a condition to require special medical advice, nature will regulate your sleep to the wants of the system, in less than a month; and you will not only go to sleep at once, but will sleep soundly. "Second naps" and siestas make the mischief.

POSITION IN SLEEP

Hall's Journal of Health. Feb. 1857. Vol. 4, No. 2. Pages 45-46.

It is better to go to sleep on the right side, for then the stomach is very much in the position of a bottle turned upside down, and the contents are aided in passing out by gravitation. If one goes to sleep on the left side, the operation of emptying the stomach of its contents is more like drawing water from a well. After going to sleep, let the body take its own position. If you sleep on your back, especially soon after a hearty meal, the weight of the digestive organs, and that of the food, resting on the great vein of the body, near the back bone, compresses it, and arrests the flow of the blood more or less. If the arrest is partial, the sleep is disturbed, and there are unpleasant dreams. If the meal has been recent or hearty, the arrest is more decided, and the various sensations, such as falling over a precipice, or the pursuit of a wild beast, or other impending danger, and the desperate effort to get rid of it arouses us; that sends on the stagnating blood, and we wake in a fright, or trembling, or perspiration, or feeling of exhaustion, according to the degree of stagnation, and the length and strength of the effort made to escape the danger. But when we are not able to escape the danger, when we do fall over the precipice, when the tumbling building crushes us, what then? *That is Death!* That is the death of those of whom it is said, when found lifeless in their bed in the morning, "They were as well as they ever were the day before;" and often is it added, and *ate heartier than common!* This last, as a frequent cause of death to those who have gone to bed well to wake no more, we give merely as a private opinion. The possibility of its truth is enough to deter any rational man from a late and hearty meal. This we do know with certainty, that waking up in the night with painful diarrhœa, or cholera, or bilious colic, ending in death in a very short time, is properly traceable to a late large meal. The truly wise will take the safer side. For persons who eat three times a day, it is amply sufficient to make the last meal of cold bread and butter and a cup of some warm drink. No one can starve on it, while a perseverance in the habit soon begets a vigorous appetite for breakfast, so promising of a day of comfort.

HOW TO SLEEP WELL

Hall's Journal of Health. March 1871. Vol. 18, No. 3. Pages 49-51.

There can be no healthful sleep except that which follows the sleepiness resulting from the voluntary and involuntary action of the muscles of the human body. Weston, the great walker, falls into a sound, deep sleep almost as soon as he is put to bed, at the appointed time for rest. This is the sleep from voluntary muscular exercise. A person in good health sits around the house all day; an invalid may all day sit, and lounge, and lie down from morning until night, without sleeping; and both the healthy man and the invalid, in the course of the evening, will become sleepy, and fall into sound repose, the result of the weariness which involuntary motion brings about; for the various organs of the body, the heart, the liver, the stomach, the eyelids, work steadily every day. The intestines are as ceaseless in their motion as the waves of the ocean; as these latter are always dashing towards the shore, so is the great visceral machinery working, working, working, pushing the wastes of the body downwards and outwards from the first breath of existence to the last gasp of life.

There is not a movement of the system, voluntary or involuntary, external or internal, which does not require power to cause it. When that power is to a certain extent exhausted, instinct brings on the sensation of sleepiness, which is the result of exhausted power intended by nature to secure that cessation from active action which gives time for recuperation, very much as a man who runs for a while stops and rests, so as to get strength to run again.

We get up in the morning with a certain amount of reserve or accumulated strength; in the course of the day that strength becomes expended to the point necessary for the commencement of a new supply, which supply comes from rest, the rest of sleep.

Opium, narcotics, all forms of anodynes, cause sleep artificially, by compelling rest. A horse may be tied so that he cannot move; he is compelled to be at rest; it is not the rest of tiredness, hence is unnatural. Anodynes in a sense tie a man down; they take away his power of motion, they compel a rest, but it is not the rest which is a result of used-up strength, hence it is an artificial rest, causing artificial sleep, not natural; and sleep which is not natural cannot be healthful; hence the truth of the first utterance of the chapter; healthful sleep comes from the expenditure of the strength of the body in various forms of exercise.

There are more insane persons in the United States than in any other part of the world by one hundred per cent. “I can’t sleep” is a complaint becoming every day more familiar to the city physician, and sleeplessness always precedes the ordinary forms of insanity; on the other hand, an improvement in the ability to sleep is a certain indication of coming restoration to reason. Hence the want of ability to sleep well, soundly, and connectedly should always meet with prompt attention, to prevent its becoming a habit, a second nature. The speediest method of doing this is to break up the present associations, whatever may be the sacrifice; get some different employment, something more active or stirring. The next best thing is a long journey on horseback, with a good companion; a journey which has an end in view, the selection or location of lands for investment; camping out for months together as far as is practicable from human habitations, relying for provisions wholly on what can be caught or hunted. Visiting new and strange countries is another method of breaking up the treadmill sameness of some kinds of business. The great point for those who cannot sleep satisfactorily is to be a large portion of the time in the open air, and to be occupied in a way to bring into activity other muscles and other mental operations; and in proportion as they are of pleasurable and absorbing interest, so much the happier will be the good effect, and the more speedy will be the return to that “balmy sleep,” the very thought of which, as enjoyed in youth, is a happiness. Neither money nor medicine can purchase healthful sleep; it can only be procured in all its deliciousness by large outdoor activities or homely toil.

NECESSARY RULES OF SLEEP

Dr. Forbes Winslow

Hall's Journal of Health. Apr. 1888. Vol. 35, No. 4. Page 82.

There is no fact more clearly established in the physiology of man than this, that the brain expends its energies and itself during the hours of wakefulness, and that these are recuperated during sleep. If the recuperation does not equal the expenditure, the brain withers; this is insanity. Thus it is that in early English history, persons who were condemned to death by being prevented from sleeping, always died raving maniacs; thus it is, also, that those who are starved to death become insane,—the brain is not nourished, and they cannot sleep. The practical inferences are three: (1) those who think most, who do the most brain work, require the most sleep; (2) that time "saved" from necessary sleep is infallibly destructive to mind, body and estate; (3) give yourself, your children, your servants, give all that are under you, the fullest amount of sleep they will take, by compelling them to *go to bed* at some regular, early hour, and to rise in the morning the moment they awake; and within a fortnight, nature, with almost the regularity of the rising sun, will unclose the bonds of sleep the moment enough repose has been secured for the want of the system. This is the only safe and sufficient rule; and as to the question of how much sleep any one requires, each must be a rule for himself; great Nature will never fail to write it out to the observer under the regulations just given.

Lyttelton Stewart Forbes Winslow (1844-1913) of London, was a controversial psychiatrist who spent his career attempting to convince courts that crime and alcoholism were due to mental instability. He was appointed a Member of the Royal College of Physicians in 1871. He became an adherent of hypnotism in dealing with psychiatric cases and played a role in securing reprieves for several convicted murderers. He was famous for his involvement in the Jack the Ripper and Georgina Weldon murder cases.

THE VALUE OF SLEEP FOR WOMEN

Hall's Journal of Health. April 1891. Vol. 38, No. 4. Pages 83-84.
Reprinted from the Boston Journal of Health

Our American girls lay too little stress upon the value of sleep as the best and most wonderful tonic to the human system. It is no uncommon thing for them to be up until midnight or later, and yet arise in time to breakfast with the family at the usual hour, eight o'clock in the morning. The parents are somewhat to blame in this matter. Many of them have still the old fashioned idea that lying in bed in the morning is a form of idleness that should not be indulged in; and fathers, particularly, are most apt to feel that their daughters are inattentive if they are not on hand to brighten the breakfast hour and give them a good morning kiss. And it is a hardship, but a necessary one, if we would have our daughters retain their health and beauty.

An unusually handsome St. Louis woman, says the *Post-Dispatch*, of that city, who has at the age of almost fifty years the fine well rounded figure and the elastic step and carriage of a girl, the delicate rose-hued skin, and the brilliancy of youth in her eyes, says that she has made it a rule to retire at nine o'clock, except on very rare occasions; and then she takes a nap in the afternoon to prevent the ill effects of the late hours which are to follow.

Our American women of all classes need, more than any other people in the world, the rest and refreshment which only sleep can give to overwrought nerves and overworked systems, for nowhere else do the women live under so much physical and mental strain. To some natures sleep does not come easily. In that event, some light exercise should be taken nightly before retiring, directing the blood thereby into proper channels, when sleep will come readily as to a tired child. What women need most is a knowledge of self, and an intelligent understanding of nature's laws, not a parcel of nostrums of which they know nothing, and which may be hurtful in the extreme.

NECESSITY OF NATURAL SLEEP

Hall's Journal of Health. May 1891. Vol. 38, No. 5. Pages 105-106.

Dr. Talcott, Medical Superintendent of the Middletown (N.Y.) Insane Asylum, in a late report, makes some valuable suggestions upon the subject of sleep and sleeplessness. Neither tongue nor pen can too emphatically warn against the dangers which arise from loss of sleep. "If the goddess of sleep fails to respond when we appeal to her for tender and soothing caresses," writes the Doctor, "then, indeed, we are not only harassed in heart, but broken in brain, and made bankrupt in body and mind." The choroid plexuses are the delicate fringings of blood vessels which project into the brain. At night and under favorable conditions they swell and guard the brain from all disturbances; but when these sentinels of the brain are enfeebled by too great toil, physical disease or mental weariness, they fail to do their work and the antagonist of sleep enters. In the brains of patients who have died insane, there has been found marked disease of these vessels.

One of the most efficient treatments for sleeplessness is massage. This treatment is described in full in the Superintendent's report. The free and indiscriminate use of narcotics is mentioned as one of the most frequent causes of insanity. They are principally used by the overworked, the worrying and discontented. Carlyle says, "The race of life has become intense; the runners are treading on each other's heels; woe to him who stops to tie his shoe strings." Dr. Talcott suggests a remedy in these words: "National decay can be averted only by a general reform in our methods of living, and foremost in the line of reform rises a grim and persistent demand for necessary and recuperative sleep."

THE SCIENCE OF SLEEP

Sleep (Le sommeil), by Henri de Toulouse-Lautrec, 1896. National Gallery of Art

OF SLEEP

Its Utility, Causes, Its Varieties, Perturbances, Defect, Excess; of Their Irregularities, and of the Rationale, and Cause of Dreams; Translated from Dr. Gregory's Conspectus Medicinæ

Dr. Stancliffe

The Medical and Physical Journal. October 1810. Vol. 24, No. 140. Pages 279-285.

A man is not always capable of exercising his senses or producing motion at the instance of the will: it is necessary that either function be exerted by intervals, so that the muscular and nervous powers being exhausted by exercise, may be refreshed by repose and quiet.

That state in which our perceptions are distinct, and in which we direct the muscles of voluntary action according to the will, is that in which we are awake: that in which we are neither sensible (of external objects) nor capable of producing motion by the will is called sleep.

But each of these states has its degrees of perfection, so that, strictly speaking, one may neither sleep nor be able to discharge properly the duty of one awake. Such as are in the most healthy state sleep very soundly, and neither possess voluntary motion nor the use of the external senses; nor do they recollect the actions of the internal organs; but such as are but half-asleep have however some perceptive faculty, and though inaccurately, yet perceive many external things; they call to their recollection many circumstances, exert the powers of the imagination, revolve in mind, and are agitated by various affections of the mind; they frequently talk, sometimes rise, clothe themselves, walk about and exercise the functions of people awake. But the vital as well as natural actions go on most perfectly during sleep, but these are observed to be somewhat slower than when awake.

After the usual labour of the day, a light supper, moderate venery, a most sweet sleep succeeds, which is aided by the darkness and stillness of night.—Sleep is preceded by a desire of quiet, ease of body and tranquillity of mind, weakness, lassitude, a sense of fatigue, especially in those muscles generally in use, dullness of the external senses, disorder of the internal, distracted attention, inobedient to the will, involuntary recollection, fancy vague and at length credulous, a kind of delirium, lastly entire oblivion of every thing: the muscles weary and relaxed, can neither direct or support

the particular parts to which they are appropriated, nor on that account the whole body: the eyelids twinkle, and are afterwards shut, the jaw falls, the head nods, every member gently inclined, is at rest, *and the body is bent forward, unless it falls down during sleep*—The pulsations of the arteries become slower and more full, the respiration more gentle and more profound, and many snore during sleep; the animal heat is diminished as well as several secretions; nor are the accustomed appetites and propensities perceived.

The length of sleep depends much upon age, constitution, habit, and in short the state of the body when sleep had stolen on. Various stimuli prevent sleep, either applied externally or which occur internally, light, noise, ruder touch, hunger, thirst, and inclination to make water.—At length sleep is broken, yet not so suddenly but that perturbation of the internal senses, dreams, dullness and imperfect use of the external senses, are for the most part observed, and though we frequently remember the dreams of the morning, yet the rest is almost entirely forgotten. At length we awake, yawn, and stretch our limbs which have been for a long time bent, just as if we were going to sleep;—We begin once more to perceive our natural appetites and propensities, and are shortly alive to every faculty both of body and mind.

The cause of sleep, or at least, its ultimate and proximate cause is at present unknown, and will probably long remain a secret. It is very improperly attributed to a peculiar fluid, with which the nerves are filled and alternately deprived; because sleep is in many instances readily protracted, where the fluid (if such really exist in the nerves and brain) cannot be much exhausted; and sleep is often continued for a considerable time after the nerves ought to abound sufficiently with such peculiar fluid.

Nor is sleep said with greater propriety to arise from compression of the brain; because no such compression can in general be shewn, nor can, indeed, exist; and a stupor induced by compression of the brain, differs very much from natural sleep; for it neither refreshes, nor can it be so interrupted but that the patient immediately relaxes into the same state as before, on removing such exciting stimulus. But natural sleep is readily repelled by any stimulus, when nothing is employed to free the brain from compression.

Every symptom which accompanies sleep convinces us, that the state of the whole nervous system, and especially the brain, is greatly changed; but leave us altogether ignorant of what such mutation is. It will however be of some use to know the remote causes of sleep and watching, without the knowledge how that state is induced, by the assistance of which physicians frequently attempt, and not in vain, to regulate sleep according to circumstances.

All the senses, external as well as internal, every affection of the mind, each action of the muscles, excite the nervous system, and put man upon his guard, the more readily in proportion to his strength. Thus vivid light, sound, grief, anger, joy, sorrow, fear,

anxiety, hunger, thirst, eager desire, motion of the body, a lively memory or imagination, intense thought deprive one of rest. There can be no gentler impression upon the organs of sense than the humming of bees, the murmur of a gentle stream, a dull frigid oration; in short, such an exercise of the memory as is neither sufficiently laborious, nor which rouses the mind, invites and cherishes sleep. The too violent force of the blood towards the head, as frequently happens in fever, repels sleep. But a free and equal distribution of the blood throughout the whole body, and especially the extremities, frequently induces sleep. Whatever relaxes the body favours sleep; hence various evacuations, bath, fomentations, sometimes even heat are useful in procuring sleep. After meat and venery *sleep readily steals on*; a strong appetite being allayed, and the body somewhat relaxed, intense and continued cold induce sleep not to be readily broken, and which is often fatal. In short, there are substances, which when in contact with the body, or when received internally, not only do not excite the nervous system, but are obviously soporific, and render it less fit for sensation and motion, thus inducing sound sleep. Of this kind are the remedies termed narcotic, opium and the like; among which we may reckon even wine when taken in too great quantity, and certain lethiferous vapours, as that of burning charcoal. Lastly, watchfulness itself is not uncommonly a cause of sleep; wherefore, during the time we are awake, we exercise our organs more or less; and thus diminish and expend the nervous power. And, indeed, the more laboriously the body is exercised, the greater necessity will there appear for sleep.

The time passed by the foetus in the womb seems to be chiefly consumed by sleep; and premature births, which still survive, sleep away the first months almost entirely. Youths and men who pass a laborious life, more than adults or the luxurious and lazy, also sleep sounder; because they exercise the body properly, which is not oppressed with food, nor their minds distracted by cares. Sweet sleep, the reward and solace of labour, virtue, and temperance, are not readily granted to the undeserving.

Besides, as the body daily increases, more and more sleep is required; since this does not a little tend to refresh and nourish the body. In the middle of life, men require less sleep. Habit is however a powerful agent; some require but four hours sleep, others consume more than ten of each day. Some almost worn out with age, drowsy and torpid, sleep the greatest part of their time.

The use of sleep from its effects upon the body is sufficiently obvious. The mental and corporeal strength, consumed by exercise, *it repairs*; to this, it restores its former vigour and alacrity; it renders the muscles *rigid, sore, tremulous, and wearied with intense labour*, again vivid, strong, and capable of motion: the pulsations of the arteries becoming towards the evening more frequent, it tempers and restores fo the morning moderation; it seems to favour the concoction of food and the apposition of nutriment to repair the loss of the solids; it diminishes the secretions and excretions; and it allows

the secreted fluids to become thick, since the body is less sentient and mobile.—Hence, for the purpose of preserving life and health, sleep is not only useful, but altogether necessary; and is the most excellent remedy for the cure or relief of many diseases.

Want of sleep is hurtful in many ways, especially to the nervous system. It renders the external and internal organs of the senses, and every other motion whatever, less fit to discharge its office. Hence, loss of sense altogether, or sense imperfect and depraved, pain in the head, vertigo, weakness, loss of memory, a kind of delirium, and even insanity itself; debility of the limbs, and an imperfect and inordinate action of all the vital organs, pulsation frequent, heat, fever, bad digestion of the food, the body scarcely supported, emaciation, increased secretions and excretions either obstructed or deranged.

Sleep is impeded, as well in healthy as in diseased persons, by various causes already recited. Sleep is deficient in many diseases, in some of which there is not sufficient pain, anxiety, or uneasiness, as would banish or interrupt sleep. All fevers cause one to sleep unsoundly, as well on account of the general uneasiness, which always accompanies this disease, as well as the increased impetus of the blood frequently towards the head, as well as from derangement of stomach oppressed with crude food or drink. This is the reason why many hypochondriacal and hysteric patients sleep so unsoundly; since their digestion is bad, and their stomach is liable to many though slight complaints, the slightest of which, especially of the body, have become too mobile and irritable, and hence break their sleep.

Deficiency of sleep in like manner, both in disease and in health, but here is especially hurtful,—the strength of the patient being diminished, by the intense power of the disease inducing pain of the head or delirium, digestion being impeded. Therefore it is not only the most unfavourable sign of ill health, but frequently the cause of other and often serious complaints.

Excess of sleep is seldom injurious. It weakens the whole system, renders one torpid, dull, and nearly stupid, and diminishes the principal secretions and excretions; hence fulness, obesity, flaccidity, and incapability of discharging all the vital functions.

The causes of this excess are either the common ones already recited, uncommonly intense, or some derangement of the brain, as compression, effusion of a fluid, &c.; or, as it seems, sometimes, great *and inordinate* debility, such as is induced from any uncommon cause, as towards the conclusion of some fevers, or in convalescents from these and other diseases, although in these instances many causes of prolonged sleep are not present, and which might render it hurtful; or sometimes perhaps grief or fear, deep and long continued, may have induced a surprising and unexpected sleep. In fine, some by custom alone have learnt to sleep much longer than is necessary, without any

great detriment. Nor are examples wanting, where several days, nay, even weeks and months have been passed in uninterrupted sleep, without any manifest cause.

Dreams, which frequently agitate the mind during sleep, or which please, vex, terrify, and carry us into other worlds, are deemed by physicians to be diseases, for in perfect sleep they are either entirely wanting, or leave no recollection behind on the memory.

These occur either on account of the person not having slept sufficiently, or whose memory and imagination are still lively, although the will no longer remains, or on account of certain impressions, internal or external, which are so powerful, as to cause him to perceive them, though they do not break his sleep; of which, while half asleep, he forms some judgment, and strangely confounds them with objects of memory and imagination. For these which spontaneously occur during sleep, and which are not obedient to the will, are assumed for realities.

Familiar dreams instruct those who are subject to take a nap, or during the time they awake, though in other respects very healthy, and not liable to any peculiar irritation; dire dreams teach what are the consequences of bodily anxiety, as from its supine posture, or from oppression of the stomach by much food and wine; particular dreams shew that they derive their origin from pain in some part, or from the application of cold, or from an unequal and hard bed, or from the state of the organs of generation, or from fever, or in fine, from various complaints of the chest. It undoubtedly seems that man, in this state, enquires the cause of that sensation which he perceives, and frequently forms such as are absurd and ridiculous.

Every sensation, however, so excited in one who sleeps, will be very vivid, for here his entire undivided attention is exerted, without any check from the judgment. Hence the power of the mind is weak in dreams, but fear, grief, lust, or whatever accidentally occurs to the mind, immediately occupies it, and propels the man.

Swift and fleeting dreams sometimes occur, so as that a long series of years, and innumerable transactions, are observed in the mind of one asleep, in a less time than can be mentioned. It is not incredible, sometimes that the voice which wakens one, before we in reality awake, commonly causes, in the first place, a long vision.

Dreams are much directed by custom, so that some will entirely vanish, while others have learnt to direct their dreams at pleasure. Among such a number of absurd and ridiculous things, we need not wonder if some are silly, or in short, true; to wit, if any one of good sense, more awake than asleep, revolves many things in his mind, and foresees what may probably happen.

"Dr. Stancliffe" is likely John Stancliffe (1774–1816), the lecturer in chemistry at the Middlesex Hospital, London. Dr. James Gregory's *Conspectus Medicinæ Theoreticæ* was originally published in Latin in 1780 as a textbook to accompany Gregory's lectures. It was reprinted in numerous editions through the mid-19th century. Gregory (1753-1821) was a physician and classicist at the University of Edinburgh and the Edinburgh Royal Infirmary. His other books included *A Theory of the Moods of Verbs* (1787) and *Literary and Philosophical Essays* (1792).

THE INFLUENCE OF SLEEP OVER DISEASE

The Dental Register. June 1862. Vol. 16, No. 6. Pages 285-286.
Reprinted from the Medical and Surgical Reporter

In all forms and conditions of disease, both acute and chronic, the state of the patient as to *sleep* is an important consideration, both as regards his comfort, and also as regards the satisfactory progress of his case. The nature of this condition of animal life we do not fully understand; we only know that it is a necessary one, and having a vast influence on the state of the system. Its purpose seems to be to afford an opportunity, by the suspension of certain activities of the system which require the exhaustion of those powers that emanate from the nervous system, for the reinforcement of those powers. *It is also during sleep that the repair of the tissues by nutrition is provided for.* Not that all nutrition is suspended during our waking hours, or that all waste is suspended during sleep; but that in two states of sleeping and waking there is respectively a large predominance of the repair and the waste.

Sleep is not merely rest, as it has been sometimes considered, an entire rest of all the organs at once; it is something specifically different. It is a condition of an entirely different nature, and a condition for which rest is not, in any sense, a substitute. The mere facts of existence, without exercise, without fatigue; the simple going on of life—implies a certain expenditure of force, which renders necessary, at certain intervals, a suspension of those functions of the brain and nervous system which are subservient to the phenomena of mind. It is possible that ordinary rest might afford an opportunity for the nutrition of all these tissues, except those which are the agents of the mind. But it seems to be necessary, for the repair of these, that the functions of the mind should also be suspended. Of the physical condition of the brain in sleep, and also concerning the peculiar state of the mind in sleep, notwithstanding the many theories which have been formed concerning them, we know nothing with certainty; and this is not necessary to the practical management of the sick. What should guide us is the knowledge that a certain amount of sleep, at proper intervals, is an absolute necessity, and that its absence or its deficiency is always a great evil, and to be prevented by every possible means. In acute diseases a sufficient amount of quiet sleep is at once a favorable indication of the nature and issue of a case, and also is an important agent in the promotion of a favorable issue. Its absence, on the contrary, is, *pro tanto*, an unfavorable indication as to the result, and also promotes an unfavorable issue. Want of sleep adds to the sufferings of the patient, and also to his exhaustion, and consequently interferes with the success of the sanitary process, and impairs the power of recovery. In every

point of view, then, the state of the patient in this respect becomes the object of special attention. Salutary changes in the condition of a patient will be often found to take place during sleep, and to manifest themselves most obviously on awaking from that which has been sound and refreshing.

CASE OF PROLONGED AND PROFOUND SLEEP, OCCURRING AT INTERVALS DURING TWENTY YEARS

W. G. Gimson

The British Medical Journal. June 13, 1863. Vol. 1, No. 128. Page 616.

J. C., aged 44, a farmer, had never been ill, beyond what he describes as a slight cold.

In 1842 or 1843, the patient after getting very wet and not changing his clothes, suffered from a severe cold, which was followed by long and deep sleeps, the duration of each sleep being more than twelve hours, and the sleep of so profound a nature that it was found impossible to awake him. This attack lasted nine or ten months, and ceased upon the setting in of very wet weather.

In 1848, he experienced a similar attack after catching cold. This attack was more severe than the former, was accompanied by occasional trismus, lasted over a period of eighteen months, and ceased upon the appearance of wet weather.

The present attack dates from the 11th or 12th of May, 1860. At this time the patient got very wet at a fair, and experienced considerable pain in all his limbs, and especially in his back. These symptoms, I am informed, were cured by small doses of Gregory's powder. About a week afterwards, the patient became very drowsy; and when he was once asleep it was found impossible to awaken him, the duration of the sleep being from twelve to twenty-four hours.

I was called to see him after the attack had existed for some time, and found him in bed apparently sound asleep, lying upon his left side; breathing quietly, respirations 18 in a minute; pulse 64, regular, feeble; skin generally warm and perspiring; hands and feet somewhat cold; complexion dusky: there was a peculiar twitching of the eyelids, and upon separating them the pupils were seen slightly dilated, and fixed.

After calling loudly in his ears, pulling him over from one side to the other, pinching his nails, etc., he was awakened by touching the conjunctiva with my fingernail.

He awoke with a slight exclamation of surprise, and sat up. The pulse was slightly accelerated; the countenance heavy; the pupils were dilated, but acting under stimulus of light; his voice was low and husky; the mucous membrane of the fauces was slightly inflamed; his tongue was clean and moist; the bowels had been open twice the preceding evening, while he was awake. His urine was reported to be high coloured, and turbid on cooling.

He had no pains nor uneasy sensation to complain of, except a deeply seated pricking across the forehead, generally felt when awake.

He now passes about forty hours out of forty-eight in sleep; and has been known to sleep more than three days without taking food; the longest time, as I am informed, being eighty-four hours.

He generally awakes as the evening approaches; never dreams, or, if he does, the mind retains no impression of so doing; he generally goes to sleep upon the right side, soon turns over on to the left, and so remains until he awakes.

He has never voided urine nor stool even during his longest sleep, although he has several times laboured under diarrhea during the present attack.

His memory is good; he inquires after friends whom he saw when last awake, and this before time has elapsed, or circumstance has occurred, to recall the fact to his mind. And he is now as capable (when awake) of transacting business, or of any calculation, as he was at any period of his life.

Weather and the state of the atmosphere seem to exercise a direct influence upon him; he is always more wakeful, and remains longer awake during wet and dull weather than at any other time, and he will frequently awake and foretell a coming storm.

During the preceding two attacks he was bled, blistered, etc., and all the experiments were tried upon him which medicine could suggest; but with no avail. My opinion was asked as to the advisability of a seton; and, as I could not see any benefit likely to arise from that mode of treatment, I gave an opinion against it. Upon being asked, what I could recommend as likely to be of service in this case? I felt how little I could suggest in the present state of things. The appetite was good; the functions of the stomach and alimentary canal of the liver and kidneys were carried on to all appearance efficiently; the heart-sounds were clear but feeble; respiration was free but shallow; the surface was generally warm. What could be of use? I confess I was puzzled; nor could I, by searching through books, or thinking upon the case, arrive at anything like a satisfactory conclusion.

The only case I can find at all approaching the one I have related, is that by Dr. Oliver, F.R.S., of "An Extraordinary Sleepy Person," at Timsbury, near Bath, May 1694.

This person seems to have been more of a somnambulist than my patient; and although he slept as profoundly and so long as a month at a time, still he managed to eat and drink during sleep. This state of things occurred at intervals for some four years; and during that time he was bled, blistered, scarified, etc., but to no purpose. The sleep in this case was so profound that one visitor thrust a pin into the patient's arm

down to the bone without awakening him. During one attack, also, he suffered from trismus.

The physiology of sleep is too lengthy a subject to enter upon in a paper like the present. I have simply related facts as far as I am able in the case of my patient, and have done so with the hope that some one may suggest a mode of proceeding likely to be of use in the treatment of this disease, for disease it certainly is.

William Gimson Gimson, MD, (Circa 1838-1900) was a physician at Fern House Surgery in Witham, Essex, England. He was celebrated for his work during an 1867 typhoid fever outbreak in the village of Terling, Essex.

SLEEP AS A POISON

The Dental Register. Feb. 1870. Vol. 24, No. 2. Pages 103-105.
Reprinted from the Oregon Medical and Surgical Reporter.

There are slow and silent influences operating upon our lives, whose activity, though we are constantly subject to, we little estimate. One-third of our existence is under their control, and the remainder depends, in a great measure, for its health, upon the proper use of and benefit we derive from that neglected portion. Insurance agents may safely knock off one-half the premium on that man's policy who has learned to sleep well—that rises, morning after morning, thoroughly refreshed in body and mind; with whom the sun of an unclouded system springs forth to the duty of the day; whose limbs, and voice, and look, all indicate recuperation and preparation.

Sometimes the rich resources of nature may permit over drafts, but even then we tax the future, while we rest in the enjoyment of the present, for in the day-book of life the constantly accumulating little charges inevitably find their way to the ledger, and, at some time, require a balance at our hands, when least we are prepared for the emergency.

Sleep not only has to make up for the wasted powers, but supply the material for their further use; and in proportion to our remembrance of this latter object, will be our prospect of health and continued life. The pressing calls of fatigue and hunger we can not overlook—they are too urgent to be neglected—but a vitiated atmosphere, sapping continually the power of recuperation, and tending to disorganization of all the component parts of the system, receives little practical attention.

The room that we prepare for our use during the time that the being is least able to defend itself from the attacks of disease, is too often the smallest and most unhealthy in the house. Want of space to breathe makes our sleep synonymous with stagnation.

The laws of ventilation can never be properly subjected to use excepting in large apartments, as in smaller rooms we find that the necessary change sufficient to procure renewal of air, produces draught, a state of exposure necessary to be avoided.

If we were desirous of shortening the period of our existence, of paving the way for every affliction that flesh is heir to, of reducing the means of resistance to the inroads of every human malady, we would select the least room in our tenement, and gather together there the greatest number of air consumers. We should expect to come forth from our temporary coffin with blanched hue, and feeble step, with digestion impaired, and blood loaded with impurity. If, under such provocation, we can not reduce our

refractory system to perform the daily process of digestion, assimilation, circulation and secretion, by stimulating medicines, we can still further debilitate our flagging powers. At last, when old age or disease comes on us apace, though our years are not long in the land in one sense, in another, we find no lion constitution to cover our defects. View the benefit to be derived from a proper and judicious attention to the restorative power gained by healthy sleep, and we can perceive its true value.

Sleep is the suspension of sensation and voluntary motion necessary to the recuperation of the nervous system, and the due supply of nervous power for continued action. During the repose that brings suspension of exhaustion and waste, by the purity of the air we breathe not only is the circulation kept in its integrity, but the due nutrition of the system, by means of the involuntary organic functions, is also carried on in a state of activity.

One good night's sleep has not only restored the flagging energies, but often has been the critical juncture that has saved life. Rest for the tired limbs does not bring the marked change in disease that comes with abundance of fresh air, as has so often been shown to us. The accession of vitality, by the plentiful supply of fresh air, in thousands of instances during the late war, has verified the remark of a general, that "under a tree he always found the best hospital." A man's wealth is of but little value to him if he can not afford the positive luxury of pure air. That, of all others, should be the central thought of home architecture, and all such influences as would tend to hinder the free winds of Heaven, or load them with poisonous exhalations, should be banished from the apartment where nature has the only time, alone and untrammeled, to correct the mistakes of our active life. Space for breath, without as well as within, and the sickly, nervous, consumptive dispeptic, the bilious, morbid gloom of poisoned circulation, and the feeble muscular inactivity, will give place to elasticity and hope.

In this country, especially, is a fire-place necessary for the proper ventilation of the sleeping apartment, and the most perfect one that can be devised, while in sickness it is always ready for use. Stoves test the endurance of the human lungs as surely as they contaminate the air, and that form is yet to be invented that will combine safety, comfort and ventilation. The open fire-place, with its ascending and descending currents, if it be properly constructed, preserves the necessary equilibrium of warmth, freshness and cheerfulness, that should make the sleeping apartment the pleasantest in the house.

CURE FOR SLEEP-WALKING

The Dental Register. Oct. 1872. Vol. 26, No. 10. Page 417.

This troublesome habit often resists all the common-place plans to break it up. When such is the case. Dr. Pellizzo, in the *Abeille Medicale*, recommends the use of bromide of potassium. We tried it in the case of a girl who would get up in her sleep, walk about her room, eat, etc. About 30 grains daily (morning and evening) effectually cured. It is also of good service in the agitated and restless sleep of good children.

SLEEP

The College Courant, Feb. 8, 1873. Vol. 12, No. 6. Pages 67-68. Published by Sage Publications, Inc. Reprinted from Chamber's Journal.

In 1855, it occurred to Dr. Fleming, then a professor in Cork, to try the effect of compressing at the upper part of the neck the carotid arteries, two of the vessels which convey the vital fluid to the brain. He requested a friend to make the experiment on himself. The result was the production of a state of complete unconsciousness, in which, however, the subject of the somewhat hazardous experiment dreamed with great activity, a few seconds appearing as hours, from the number and rapid succession of the thoughts passing through his mind. The effects passed off on the removal of the pressure from the vessels. This was clearly a very different condition from that of stupor, and one not distinguishable from ordinary sleep. Dr. Fleming was cautious in drawing conclusions, but he threw out the suggestion that possibly after all ordinary sleep might be connected with an opposite cerebral condition to that commonly assigned as its cause. In a few years this was placed beyond all doubt Mr. Durham, a London surgeon, and almost simultaneously Dr. Hammond of New York, showed, by a series of experiments on the lower animals, the results of which were first published in 1860, that during sleep the brain is in a comparatively bloodless condition. The experimenters observed the brain becoming pale, and sinking down as sleep came on; and as that condition passed off, they saw its surface rising up and becoming suffused with the red blush of the returning circulation. At the period of complete awakening, the vessels became more full and distended, and a large number sprang into sight which had been invisible during slumber. These experiments, when viewed in connection with that of Dr. Fleming before mentioned, proved conclusively that the immediate antecedent of sleep is a diminution of the stream of blood flowing to the brain, which condition lasts during the continuance of sleep.

This discovery was at once seen to harmonize with everything known concerning the determining causes of sleep—that is, the conditions which tend to produce it. Great loss of blood, for example, predisposes to slumber. In such circumstances, the brain is brought accidentally into a state analogous to its condition in ordinary sleep. Heat is conducive to sleepiness, because it draws the blood to the surface of the body and the extremities, thus diminishing the supply to the brain. Moderate cold has ultimately a similar somniferous influence, and for precisely the same reason. Intense cold, on the other hand, has an opposite effect upon the circulation. It drives the blood from the

surface to the internal organs, including the brain, in which it accumulates. The consequence is the induction of a state not of sleep, but of coma, in which the unfortunate victim soon sinks. The inclination to sleep after a hearty dinner is due to the fact that, at such a time, the stomach, in obedience to a law to which we shall presently advert, requires an increased supply of blood to enable it to discharge its function. For this it is obliged to draw on the other parts of the system, including the brain. Monotonous sounds conduce to slumber, by tiring out the brain, thus diminishing its activity, and consequently rendering necessary a smaller flow of the vital fluid towards that organ. On the other hand, everything productive of mental excitement of any kind, including even the anxiety to invite the approach of slumber, is directly hostile to it, because activity of the brain requires, as a prime necessity, a flow of blood towards that organ, inconsistent with the physical conditions of sleep. This discovery of the comparatively bloodless condition of the brain during sleep brought out also a perfect harmony in the law of nutrition of the different parts of the system. Every one of the bodily organs exercises its function at a considerable expenditure of its own substance. Its period of activity is for itself one of constant wear and tear. Part of its structure is being constantly oxygenated, and thrown off as waste matter. This, of course, renders necessary a compensating process of reparation. The necessity of the periodic quiescence of an organ lies in the fact, that it is only then that its nutrition is possible. During its time of activity, its force is expended in the exercise of its function. To enable it to perform it, there is an increased determination of blood to the active organ. When it has done its work, this excess of supply of the vital fluid is drained away to other organs, whose periodic activity is commencing. Then begins its season of rest. Though its supply of blood is now much smaller, the fluid circulates more slowly, and the conditions are the most favorable for the assimilation of its elements, and thus repairing the losses sustained during its period of functional activity. The heart has thus a short season of activity, followed immediately by a shorter one of rest. In the case of the lungs, the periods alternate at somewhat longer intervals. The brain has a very much longer period in which it is able to work without interruption, and this is followed by a season of repose about half as long. This rest of the brain is sleep, and its use, physiologically speaking, is to afford opportunity for the nutrition of the organ.

But though the discovery of the anaemic condition of the brain in sleep satisfactorily explained some things which were before inexplicable, the cause of that bloodless condition was itself an enigma: Like a dark lantern, the discovery referred to flashed light in every direction in which it was turned, but showed nothing of what was behind it. By what force is the blood held back from the brain? To this it might seem at first blush an adequate reply to say, that the stoppage of the organ's activity renders unnecessary an excess of the vital fluid, required only while it is discharging its functions. But apart from other objections to this view of the matter, it reverses the

sequence in which the phenomena actually occur. The diminution of the supply of food precedes, not follows the cessation of functional activity. Fleming's experiment, to which we have referred, shows that sleep is at once produced by partly stopping the channels through which the vital fluid is conveyed to the brain. It would appear, therefore, that some special mechanism is required to secure at the proper moment the diminution of the streams flowing to the organ. The object to be effected is of sufficient importance to make us look for some special arrangement. That object is to stop at once the complicated machinery of an organ whose ramifications extend to every part of the body, to obliterate thought, to overmaster volition, and steep the senses in forgetfulness. Every one knows how thoroughly effective is the means used for this end. Who has not been obliged to succumb to the imperious power of sleep, in spite of every effort to escape its thralldom? People will sleep undisturbed amid noises so loud, that "with the hurly death itself awakes." In the battle of the Nile, many of the ammunition boys fell asleep, notwithstanding the roar of the conflict and the dread of punishment. After the battle of Corunna, whole battalions of English soldiers on march slept while in rapid motion. Damiens, who attempted to assassinate Louis XV, slept on the rack while being subjected to dreadful torments, and he could be kept awake only by changing the mode of torture. It is also to be noted that, whatever be the mechanism for restraining the flow of blood to the brain, it cannot be under the immediate control of that organ. The brain is unable to superintend an arrangement for the stoppage of its own function. Every exertion of its own to bring on sleep thoroughly defeats its object.

This brings us to the last important contribution to the physiology of our subject. In 1868, Mr. C. H. Moore published a very ingenious essay, in which he endeavors to solve the problem of the comparatively bloodless condition of the brain in sleep. He shows that this object can be effected in no other way than by a contraction of the arteries which convey the vital fluid to the brain. The mode in which this contraction is brought about is not difficult to understand; but it is necessary to premise one or two elementary physiological facts. The walls of the blood-vessels consist of several coats, one of which is of muscular fibres which encircle the whole artery or vein. When these fibres contract, they necessarily narrow the calibre of the vessel, and they are connected with nerves which regulate their contraction. The whole nervous mechanism of the body consists of two sets of nerves and nerve centres—namely, the cerebro-spinal system, composed of the brain, the spinal cord, and the nerves connected therewith; and the sympathetic system, consisting of a chain of small knots of nervous matter (or *ganglia*, as they are called) lying in front of the spinal column, and connected by nervous cords with the cerebro spinal nerves. In regard to nervous force, the sympathetic system has partly a primary independent power of its own, and is partly controlled by the great cerebro-spinal system. Now, the nerves which control the contraction of the arteries of the neck proceed from the sympathetic system. The brain itself sends no nerves to its own

arteries. Hence, in the matter of the supply of blood, that organ is subjected to a mechanism over which it has no direct control. The key of the position is in the keeping of the ganglia of the neck, and if it were possible for them to use their power autocratically, they could at any moment lock up in slumber the great organ above them. They have only partly to turn the stop-cock that is, to exert their force on the muscular walls of the arteries, when the contraction of the latter would render the brain as powerless as a steam-engine with the motive-power turned off. We have seen that the ganglia have such a power; but of course they do not exercise it under any conditions implying intelligence or volition. Mr. Moore's theory is, that while the primary force of the ganglia tends always to contract the arteries, their power is kept in abeyance while the brain is in a state of activity by its exercising over them an overmastering force. But when the brain becomes fatigued, this inhibitory force is first diminished, and then ceases, and as the ganglia are liberated from control, they begin to put forth their native power over the muscular walls of the arteries, with the almost immediate effect of diminishing the flow of blood to the brain, and locking up that organ in sleep. Before perfect sleep supervenes, however, there is occasionally a struggle for empire; the brain resumes by snatches a temporary sway over the ganglia, until it is no longer able to continue the conflict. During sleep the brain throws off the unremoved effete matter which had latterly clogged its operations, and given rise to the feeling of weariness, premonitory of slumber, and it assimilates new material for the repair of its own substance. When thus invigorated, it is in a position to reassert its power over the ganglia; its arteries, liberated from the contractile force, expand to their usual dimensions, and the flow of the vital fluid to the brain restores the physical conditions of that organ's activity.

It would be difficult to obtain direct verification of Mr. Moore's theory, but the fact that it renders possible a satisfactory explanation of the cause of dreaming and somnambulism, gives it some indirect confirmation. Dreaming is a state of imperfect sleep, in which some of the mental faculties, notably the memory and the imagination, are in active operation, while the other mental powers, and the power of sensation, are in abeyance. In somnambulism, also, certain senses and faculties are completely suspended, while others are in active exercise. The simplest case of that condition is sleep-talking, in which the power of articulate speech has escaped the spell laid on the other faculties. In the more remarkable cases, the locomotive apparatus is also emancipated. In regard to his mental condition, the somnambulist may be described as alive to objects of attention, and wholly indifferent to objects not within the range of his train of thought. On awakening, he usually has no recollection of his previous condition; but on again relapsing into somnambulism, he continues the line of thought and action developed from the associations which his mind received on the former occasion. Both dreaming and somnambulism, therefore, imply a completely torpid state

of some parts of the cerebral apparatus co-existing with the exemption of other parts of it from the somnific control. Now, though the minute topography of the brain given by phrenology may not be correct, there are reasons independent of the principles upon which that science is based for believing that to different parts of the brain are assigned different functions. If this be the case, the phenomena of the two conditions we are considering would be explicable on the assumption, that while the supply of blood was reduced in some segments of the brain to the sleeping point, in other parts of the organ it flowed in unabated force. This abnormal condition would be produced by the unequal contraction of one or more of the cerebral arteries, resulting from an imperfect action of the ganglia, and this imperfect ganglionic action in its turn might be caused either by a partial failure of their automatic power, or in their force being partly neutralized by that of the brain.

FORCED SLEEP

The British Medical Journal. Feb. 3, 1877. Vol. 1, No. 840. Page 144.

In a very interesting note on the relation of the waking state to external stimuli, the Academy points out that the *experimentum mirabile* [remarkable experiment], described by Kircher in the middle of the seventeenth century, has of late years been made the starting-point of several interesting lines of research. In its original form, the experiment consists in tying down a cock to a table and drawing a straight line with a piece of chalk from the tip of his beak. The bird then remains motionless for a variable length of time, making no attempt to struggle or regain its freedom. Kircher's own explanation of the fact is fantastic: "cujus quidem rei ratio alia non est", he says, "nisi vehemens animalis imaginatio, quæ lineam illam in pavimento ductam vincula sua, quibus ligatur, apprehendat" [The reason for this matter is indeed nothing other than the strong imagination of the animal, which perceives that line drawn on the floor as its own bonds by which it is tied.] Czermak was the first to inquire into the matter in a systematic way. He confirmed the truth of Kircher's statements, and extended them to a great variety of birds. But he showed that, in order to obtain the desired effect, it was enough to hold the bird firmly down with the hands, preventing any voluntary movement of the head and neck. Bonds and chalk-line he found to be quite superfluous. In another set of experiments, the body of the fowl was fixed, while its head and neck were left at liberty; an indifferent object was then held close to its eyes; the same curious quiescence was induced, occasionally conjoined with phenomena of a cataleptic order. Czermak believed these singular results to be due to the development of a hypnotic state in birds, analogous to that occasionally observed under somewhat similar conditions in the human subject. Preyer's investigations included rabbits, a guinea-pig, and a squirrel, in addition to birds. He never succeeded in producing any condition at all like sleep. He rejected Czermak's explanation, and ascribed the immobility of the various animals experimented on to simple terror: the first impression of utter helplessness—of the futility of struggling—persisting in the creature's mind even after all restraint had ceased. Heubel (Pflüger's Archiv, xiv, 2 and 3) rejects the theories of all his predecessors. He gives reasons for rejecting them which tell more strongly against those of Kircher and Preyer than against that advanced by Czermak. Previous inquirers he believes to have witnessed only the first stage of the phenomenon—that stage which is most easily induced in animals of relatively high organisation. Cold-blooded vertebrates, such as the frog, may be reduced to a state of complete immobility at will; they will remain in a constrained position for hours, instead of seconds or minutes. This abolition of voluntary movements and of consciousness is nothing more than occurs in

ordinary sleep. Pfluger has given many reasons for his belief that the waking state requires for its maintenance a continual stimulation of the higher nervous centres by impressions conveyed to the brain along the various centripetal nerve-fibres. In forcing an animal to remain motionless for a long interval (without inflicting pain), and simultaneously excluding visual and auditory sensations from its brain, we suddenly deprive its nerve-centres of a large proportion of their accustomed stimuli. Accordingly, they are unable to remain awake, and their functional activity is only restored to them when they are roused by some impulse from without. Having satisfied himself in a variety of ways of the correctness of this explanation as applied to the phenomena exhibited by the frog, Heubel proceeds to extend his results to birds and mammals, and arrives at the conclusion that “forced sleep” will account for all the facts hitherto observed.

SENDING PLANTS TO SLEEP

Buffalo Medical and Surgical Journal. Mar. 1877. Vol. 16, No. 5-8.
Page 190. Reprinted from The Medical Examiner.

Several members of the Parisian Biological Society have recently been engaged in a series of experiments which seem to prove that everything endowed with life, whether animal, plant, or ferment, is susceptible of being brought under the influence of anæsthetics—in other words, may be sent to sleep. It has been proven that the influence of anæsthetics extends to all the animal tissues, and last of all to the central nervous system. Hence, it was argued, plants having tissues must also be subject to the influence of ether, etc. Experiments prove this to be the case. Germination is arrested by anæsthetics. The water-cress, for example, germinates within thirty hours. Ether arrests germination in this plant, but does not destroy that faculty. It merely sends the plant to sleep, for germination re-commences as soon as the use of ether is suspended. But the sensitive plant furnishes a still more striking illustration. Its sensitive faculty is rendered completely dormant by etherization, while the other living properties remain unaffected. On suspending the action of ether, the sensitive faculty of the plant is quickly restored. This capability of being sent to sleep is not confined to plants; it extends to ferments. Thus the ferment of beer, when submitted for twenty-four hours to the influence of ether, becomes perfectly dormant, but recovers its activity as soon as the anæsthetic action is suspended. In future the practical botanist must not pursue his cruel rambles without the assistance of one of the Clover family.

ACTIVITY OF THE MIND DURING SLEEP

Elizabeth Cabot Cary Agassiz (ed.) and Louis Agassiz

Science. Oct. 16, 1885. Vol. 6, No. 141. Page 344. Published by the American Association for the Advancement of Science.

In connection with the present activity in psychical research, the following extract from the recently published 'Life of Agassiz' (Boston, Houghton, Mifflin & Co., p. 181) is of interest—

"He [Agassiz] had been for two weeks striving to decipher the somewhat obscure impression of fossil fish on the stone slab in which it was preserved. Weary and perplexed he put his work aside at last, and tried to dismiss it from his mind. Shortly after, he waked one night persuaded that while asleep he had seen his fish with all the missing features perfectly restored. But when he tried to hold and make fast the image, it escaped him. Nevertheless, he went early to the Jardin des plantes, thinking that on looking anew at the impression he should see something which would put him on the track of his vision. In vain,—the blurred record was as blank as ever. The next night he saw the fish again, but with no more satisfactory result. When he awoke it disappeared from his memory as before. Hoping that the same experience might be repeated on the third night, he placed a pencil and paper beside his bed before going to sleep. Accordingly, toward morning, the fish reappeared in his dream, confusedly at first, but, at last, with such distinctness that he had no longer any doubt as to its zoological characters. Still half dreaming, in perfect darkness, he traced these characters on the sheet of paper at the bedside. In the morning he was surprised to see in his nocturnal sketch features which he thought it impossible the fossil itself should reveal. He hastened to the Jardin des plantes, and, with his drawing as a guide, succeeded in chiselling away the surface of the stone under which portions of the fish proved to be hidden. When wholly exposed, it corresponded with his dream and his drawing, and he succeeded in classifying themselves by which we may accomplish this in it with ease. He often spoke of this as a good illustration of the well-known fact, that when the body is at rest the tired brain will do the work it refused before."

Louis Jean Louis Rodolphe Agassiz (1807-1873) was a Swiss-born American biologist and geologist known for his contributions to Earth's natural history. Agassiz emigrated to the United States in 1847 and became a professor of zoology and geology at Harvard.

He is known for his observational data gathering and analysis, particularly in ichthyological classification and historical geology. Agassiz's views on race fueled slavery supporters, prompting the renaming of Massachusetts landmarks and institutions bearing his name. *Louis Agassiz: His Life and Correspondence*, was published by his widow Elizabeth Cabot Cary Agassiz twelve years after his death.

SLEEP AND SLEEPLESSNESS

The Hospital (London). Apr. 9, 1887. Vol. 2, No. 28. Pages 17-18.

This is an age of hurry and bustle. The struggle to live becomes harder day by day, because the population is increasing so rapidly. Amongst the lower orders early marriages promote and aggravate the evils attendant upon this condition of affairs. Immature and ill-developed parents produce pigmy offspring, and so the race tends to degenerate, especially in cities. The introduction of the telegraph and of steam, the increased facilities for traffic of all kinds, and the aggregation of immense populations in narrow areas, all tend to oppress the individual, and to interfere with his repose and rest. Hence the necessity for, and the value of, sleep were never greater than at present, because probably they were never more difficult to procure, to an extent equal to the demands upon the system of most brain-workers, and very many others too. Cervantes, long ago, and wisely, called down blessings on him who invented sleep. He declared sleep to be the mantle that covers all human thoughts; the food that appeases hunger; the drink that quenches thirst; the fire that warms cold; the cold that federates heat; and lastly, the general coin hat purchases all things, the balance and weight that equals the shepherd with the king, and the simple with the wise. He giveth his beloved sleep, has been the utterance of many thankful heart in times of exceptional weariness and fatigue.

Tired nature's sweet restorer, balmy sleep, with fresh and pure water, are the common inheritance of princes and peasants, and of healthy persons in all parts of the world. Yet man, with his ambitions, his strivings after power, his injustices, his necessities and his indiscretions, has wilfully done much to banish sleep from his own and from his neighbour's eyes; is doing so at the present moment, and will probably continue to do so until the end of the world. Still, it is well to remember that sleep is the natural inheritance of the healthy, the best friend of frail humanity, and like all other friends, best estimated in its loss. It is life's nurse sent from heaven to create us anew day by day; and the loss of sleep, if continued, must be followed by the loss of health, and end in the loss of life itself.

Sleeplessness being dangerous to life, it is important to ask, what are its chief causes? Overwork, excess in diet, in tobacco, in alcohol, neglect of ordinary precautions in the management of oneself, in people who are otherwise healthy and free from disease, are the fruitful producers of insomnia. It may be remembered that in former days, when the English law enacted that people condemned to death should be prevented from sleeping, the majority of the convicts died raving maniacs. Dr. Forbes Winslow has pointed this out, and has shown that those who are starved to death become insane,

because the brain is not nourished, and they cannot sleep. Non-recuperation from absence of rest and want of nourishment causes sleeplessness, and means madness in the end. Those who think most, who do most brain-work, require most sleep. Time, which some people declare themselves to have "saved" from necessary sleep, means in the end the infallible destruction of mind and body. Give, then, yourself, your children, your servants, give all who are under you the fullest amount of sleep they will take, by compelling them to go to bed at some regular early hour and to rise in the morning the moment they awake. Such is Dr. Winslow's advice, and he backs it by the declaration that within a fortnight, under such conditions, nature, with almost the regularity of the rising sun, will unloose the bonds of sleep the moment enough repose has been secured for the wants of the system. How much sleep anyone requires is a question each must decide for himself by experiment and practice. Under such conditions of life sleep would seldom or never fail the healthy, and the household would benefit in temper, in regularity, in the quality of the work done, and in the addition to the family chest, which the combined efforts of its members must produce under such advantageous circumstances.

Let us now return for a moment to a consideration of the causes and cure of sleeplessness. Prolonged mental strain in all its various phases is a common cause of sleeplessness. The student preparing for an examination, the friend depressed by the sudden death of a loved relative, the young professional man broken down by the continual pressure of new disappointments and accumulating anxieties, are all cases of acute or continued mental strain, which may result in sleeplessness. The subjects of this form of insomnia are mostly men of nervous temperament, that is, men whose temperament presents a distinct type and outward form of manners, habits, and tendencies. The aim in all these cases must be to prevent the sleeplessness by removing its causes, instead of pursuing the easier, but illogical and precarious, course of permitting it to continue, and trusting to suppress one of its effects by medicine. When a man cannot sleep because he works his brain too much, the remedy is cessation from or greatly lessening labour. Real work is, however, not often the cause of sleeplessness, but worry, anxiety, harass, which bring unrest. It is not work that wears, but worry.

To tell a busy man, with the absorbing claims of a vast business, that he must leave his office and give up work for weeks, or months, will not cure his insomnia, but rather tend to aggravate his symptoms. One of the most eminent physicians of the day, dealing with such a case in the course of his practice, ordered his patient to take two beefsteaks and a quart bottle of India pale ale for luncheon every day for a fortnight, and then to see him again. At the end of the fortnight the patient protested he could not get through his work if the treatment was continued; but continued it was for six weeks, with the result that the patient's work was reduced to reasonable proportions, and a

complete cure was effected, because the patient readily assented to take a holiday, involving change of scene and complete rest, as the result of his physician's diplomacy.

In the case of smokers, excessive smoking, with the progressive advance from mild to the strongest tobacco, means in most cases sleeplessness in the end. Even slight alteration or excess in the daily quantity of tobacco may produce unrest, followed by sleeplessness. In the same way a little more than the usual quantity of wine after dinner, or even the usual quantity of some unusual wine, will produce a like effect.

Doctors often meet with cases of sleeplessness in which alcohol alone is the cause of the wakefulness. A man may even pride himself upon his moderate use of stimulants, and yet be made sleepless by the amount of alcohol he consumes. In such cases a cessation or a reduction in the tobacco or alcohol will usually prove an effectual remedy. In the case of old persons and others, where sleeplessness becomes almost a habit, a simple and often effectual cure is to have an Etna by the bedside, which will keep milk, or beef-tea, or soup, warm throughout the night. When sleep forsakes such persons, then the taking of a little warm food will often prove effectual in producing healthful and sustaining sleep. We have not space to go further into this interesting question, and it will be seen that we have purposely refrained from recommending the prescription of medicines, because our experience teaches us that anything in the way of narcotic treatment should generally be avoided if possible.

TREATMENT BY SLEEP AND SUGGESTION

The Hospital (London). March 23, 1889. Vol. 5, No. 130. Pages 391-392.

Dr. Tuckey informs us that the system of psycho-therapeutics has attained its fullest development in Holland, and is also established in Germany, Russia, and Sweden. The system is thus described—When the patient's turn comes, "he is told to take his place in an arm-chair and to make his mind as much a blank as possible—to think of nothing at all—and to fix his eyes and attention on some special object; almost anything will do, from the operator's face or hand to a mark on the ceiling, or the pattern of the carpet. Then the phenomena which attend the on-coming of natural sleep are gradually suggested to him. 'Your sight is growing dim;' 'your eyelids are becoming heavy;' 'numbness is creeping over your limbs;' 'you are getting more sleepy;' 'you cannot keep your eyes open.' Here the eyes close of themselves, or are closed by the operator, and it is generally found that the patient is indeed asleep." About two minutes of this talk about sleep, will, it is stated, usually produce the hypnotic effect on a new patient. The patient being thus influenced, the next treatment consists essentially in directing the invalids attention to the part affected, and suggesting an amelioration or disappearance of the morbid condition and symptoms. If the malady is chronic, nervous headache for instance, the part of the head is gently rubbed, so that the patient's attention may be attracted to it, and he is told that the pain is to disappear, that he will awake feeling well, and that there will be no return. "This is generally enough," the patient is awaked and "goes about his work as usual."

Now there is nothing mysterious in this sleep. The patient, by fixing his attention on a certain point, strains the accommodation of the eyes, and strains the sight. The strain causes dilatation of the pupils and dimness of vision. The feeling of heaviness in the eyelids results from the fatigue of keeping them open in a strained position, and the assertion that the eyes are becoming tired, and the sight dim, is therefore founded on physiological data. The eyes being tired, the natural impulse is to close them, and this act calls up an association of ideas connected with fatigue, which points to sleep, aided by the monotonous tones of the operator suggesting it. It is contended that the hypnotic influence is not mesmerism, at least as exhibited by charlatans, because no unusual gifts are needed to practise the system. We must confess, however, that we do not recognize any difference between the condition of sleep now called hypnotism and mesmerism. A person composing himself and looking at the end of his nose will probably go to sleep, and if he remains long enough in such attitude, will attain towards that Nirvana which,

by some Asiatics is regarded as the *summum bonum* [*supreme good*] of this world. A person staring at a disk of copper let into a piece of zinc, will probably go to sleep even without the chemical interchange which is said to take place between the two metals. In fact, if a person stares long enough at a piece of cork held on the palm of the hand, he will go to sleep. If a magnetiser makes "passes" over a persons eyes, the person will either go to sleep, or the muscles of the eyelids becoming tired by constantly following the movements of the operator's fingers, the victim will be unable to open his eyes. Much, however, depends on constitutional idiosyncracy, when one person essays to send another to the land of dreams. The operator must at least assume a confidence, even if he has it not; and the person operated on must not be under any strong emotion, neither should he wish to resist the somnolent influence. Above all, it is desirable there should be a nervous or even hysterical temperament, although indeed this is desired by some professors. For instance, Professor Wettershand, as reported in the *British Medical Journal* last year, considers hysterical people not so susceptible, and states that after thirty years of age persons are less impressionable. We agree however with Professor Charcot, who asserts that hypnotion is suitable, and indeed possible only, for nervous and hysterical subjects. As with its predecessor mesmerism, so with hypnotism, it is nervous or hysterical persons who are most susceptible, and it is nervous or hysterical complaints which are said to be benefited. At page 25, Dr. Tuckey admits that severe pain will prevent the hypnotic sleep, yet we find cases of rheumatism in the shoulder, articular rheumatism, neuralgia, sciatica, etc., mentioned as cured by hypnotism and suggestion. In other records we find that hysterical vomiting has been cured, and that an ingrowing toe-nail has been removed during the hypnotic state. In a recent medical journal it is reported that a girl underwent an operation while asleep, and being ordered to dress herself, go to bed, and sleep on for an hour, she did so. It is not, however, stated why she should dress herself before going to bed. All this is simply a repetition of what was formerly reported under mesmerism. Nearly half a-century back many operations were performed on the susceptible natives of India by Dr. Esdaile at Madras, who first mesmerised his patients.

Professor Bernheim, of the Faculty of Medicine, Nancy, defines hypnotism as the production of a psychial condition in which the faculty of receiving impressions by suggestion is greatly increased. Although not so common as in years gone by, most of us have seen mesmeric exhibitions when the magnetiser made his victims perform various acts while in the mesmeric trance. One of the latest of such exhibitions was at the Westminster Aquarium some years back, when, if we recollect right, Dr. Donkin questioned the power of the operator, which failed on a new batch of persons from the audience being submitted without selection to the operator's tender mercies. Dr. Tuckey, in his work under notice brings forward various instances tending to evidence the influence of mind and emotion imagination over the body. Such anecdotes need not,

however, be repeated. One of the first things a medical student learns is, that there are various nervous maladies which may be excited by the emotions; and practical men are aware that it is in persons predisposed by temperament that such maladies are most readily developed. Moreover we know that mesmerism not unfrequently excited the very maladies it was supposed to cure, such as epileptic convulsions, hysterical manifestations, erotomania, etc., until at last it was said that mesmerism was a means of inducing certain maladies artificially, in order that they might be studied.

According to psychologists two kinds of nervous action go on in the brain the one automatic and instinctive, the other rational, volitional, and deliberative. Hypnotism (like its predecessor, mesmerism) suppresses the latter action, and allows full play to the former. Therefore, the more a man's actions are the result of impulse rather than of reason, the more susceptible he is to external impressions, and therefore to suggestive treatment. But this is not all. There are persons who, when placed artificially asleep, will promise to perform actions when they awake. Although clairvoyance was exploded by the offer of a £500 note if any clairvoyant could name the number and date, still the powers which belonged to the mesmeriser of sometimes being able to make his patients perform acts when they awake remains with the hypnotiser. Only recently a case of stealing a blanket while under hypnotic influence was reported; and another, of stealing a five-franc piece on suggestion.

Hypnotism as an exhibition at public entertainments has been prohibited by law in Switzerland, Holland, and Italy. In Italy it was stated that it is essential to prevent experiments which, while abolishing consciousness of action, produces morbid effects on predisposed persons, and renders them subject to the will of others." In a discussion at the New York Academy of Medicine last year it was advanced that however scientifically the subject may be treated, it is so open to abuse that its introduction into general therapeutics might be disastrous. Moreover, we have yet to learn how far hysterical subjects themselves may be permanently affected by the treatment. The dangers of hypnotism are, however, in Dr. Tuckey's opinion, exaggerated, and the stories told of persons obtaining undue influence over others by its means are mostly fables. Still Dr. Tuckey admits that when a person is continually being hypnotised by the same operator the hypnotic state can be produced with surprising readiness. We recollect years ago a mesmeriser asserting the power of mesmerising a susceptible patient many yards away, and even through a brick wall. And in the *British Medical Journal* (page 164, for 1886) it is mentioned that a Mon. Liegeois, of Nancy, sends his clients to sleep by telephone, and then suggests by the same means. We also find it stated that at Bordeaux a person used for public exhibitions became subject to spontaneous sleep, during which he attempted suicide. There are also other instances of persons falling to sleep afterwards, and of impairment of the mental faculties, especially of memory, extending even to a person forgetting his own name. There is also another

danger admitted by Dr. Tuckey. He states that in certain cases there arises a craving for the hypnotic sleep, just as there may arise a crave for wine, opium, chloral, or any other stimulant or sedative. It is true that such a craving would not be satisfied by the physician; but as we are told that no special gifts are necessary for an operator, the hysterical craver might obtain satisfaction from elsewhere.

The example of Dr. John Elliottson, once of University College and the North London Hospital, is probably strange to the present generation. This once able physician became a convert to mesmerism, and because he was not permitted to teach and practise this pseudo science in the college and hospital, he resigned his positions. Of course when mesmerism exploded, Dr. Elliottson found his occupation gone, and his professional ruin complete. The hypnotic professors do not certainly affect quite so much as the mesmeric professors of former days, many of whom believed that persons in the mesmeric state—especially women—could see inside themselves, diagnose their disease, and prescribe their remedy. But hypnotic professors believe rather too much if they really think that dyspepsia, chronic alcoholism, and puerperal mania, etc., are to be cured by sleep and suggestion. Doubtless, like the morsel of bread in the gallon of sack, there is some truth in "Psychotherapeutics, or treatment by sleep and suggestion," and so long as it is used as recommended by Dr. Tuckey, it may probably be used beneficially. Dr. Tuckey says, "The practitioner who uses hypnotism should do so with the same precautions which he adopts in administering an anaesthetic." Moreover, Dr. Tuckey does not altogether disdain to combine medicine with suggestion. Under such conditions, with the evidence before us, it would be unreasonable to doubt that benefit sometimes results to persons who are susceptible to the treatment. On the other hand, it would be equally against evidence to ignore the fact that all persons—probably the majority—are not susceptible; that there are more diseases which would not be benefited than otherwise; that the system is susceptible of abuse; and that it may possibly do injury in one direction while producing an opposite effect.

** Psycho-Therapeutics; or, Treatment by Sleep and Suggestion. By C. Lloyd Tuckey, M.D. Ballière, Tindal, and Cox, William Street, Strand, 1889.*

ARTICLES AND ESSAYS

Sleep, by Eugène Carrière, 1897. National Gallery of Art

THE PATHOLOGY OF SLEEP

The Journal of Psychological Medicine and Mental Pathology. Jan. 1852. Vol. 5, No. 17. Pages 67-81.

Every abnormal function or condition, whether it be of quality or quantity, is, of course, a pathological condition, as it is not health. This applies equally to psychical and physical states.[1]

If we cannot logically term a total absence of a function a *disease* of that function, but rather of the organ which fulfils it, we may yet be justified in applying the term "Pathology of Sleep" not only to those prototypes of the somnolent state which indicate a deranged or morbid condition of the mental organ, but also to that negative state which we term insomnium or sleeplessness, a derangement or disorder of quantity, as the other states are of quality; so far the definition of the learned author of the "Medical Dictionary" is correct?— "a nonrecurrence or interruption of sleep."

Slumber, or healthy sleep, is a state of perfect intellectual abeyance, a fallow of the mind: in the words of Dugald Stewart, "A total suspension of volition as regards its influence over mental and corporeal faculties." It is thus a blessing with which the Creator has endowed the brain, which, during this unconscious repose, regains the power or energy of which the exertion of its natural faculty had deprived it: a *recollecting*, as Liebig would imply, of that living tissue which had been wasted or exhausted by exertion. Perfect, or sound sleep, then, is a healthy state. Hence we decidedly object to the assertion of Dr. Wilson Philip, that sleep indicates the imperfection of our nature.

The morbid state of weariness does in itself indicate imperfection; but sleep, its remedy, displays rather the perfection of our being, ministering so far to our happiness that we thus enhance our abstract fruition by the force of contrast.

The term sleep has been so often erroneously applied to its affinities or analogies, as to have imparted much discrepancy to the pages of psychology. Its physiology, also, has been often sadly perverted: M'Nish, for instance, terms it "an intermediate state between life and death."

Still there is no wonder that in contemplating this deep sleep, even "tired nature's sweet restorer" should, in darker ages, have been deemed the type of death—"*mortis imago et simulacrumor*;" [*an image and likeness of death*] that the Lacedemonians were wont

to place the statues of Mors and Somnus together. No wonder that the poet should have made the first deep sleeper thus express himself—

"There gentle sleep
First found me, and with soft oppression seized
My drowned sense, untroubled, though I thought
I then was passing to my former state,
Insensible, and forthwith to dissolve."

The good Sir Thomas Brown was so deeply impressed with this likeness that "he did not dare to trust it without his prayers."

Another mind, however, equally pious, thus welcomes its visitation—

"*Somne levris, quanquam certissima Mortis imago,*
Consortem cupio te tamen esse tori."
["Gentle Sleep, although you are the most certain image of Death,
I nevertheless desire you to be a companion of my bed."]

The more our mental repose, sleep, resembles the slumber of healthy children—we may indeed say the sleep of plants—an exhaustion of consciousness—the more will be its salutary refreshing of the brain, "a repair of waste, a due repose for past action."[2]

Now, whether the brain be exhausted by labour, excitement, or disease, sleep is the only mental prophylaxis of mental decadence, the only refresher of the spirit. It is, indeed, not only a potent remedy, but a faithful harbinger in disease. In fever, and other acute disorders characterized by insomnium, our first ray of hope is the coming on of a quiet sleep. In delirium tremens, to use the words of the late Dr. Mackintosh, of Edinburgh, it is "sleep or death."

In the physical indulgences of advanced life, sleep must be constantly ensured, or apoplexy will be a frequent consequence. Sleep is, therefore, a *remedy* of the deepest value, and although so much resembling death, is, indeed, its antithesis and prophylaxis. We may yet, thus far, admit something of an analogy between them. As we may say that we are always dying or approaching towards death, from the moment that we begin to live, so we are always going towards sleep directly after we wake and begin to exert our intellectual faculties.

The contrast of sleep is the state of waking; a condition not, of course, essentially morbid within certain limits, as it is the natural and active state of mind. Insomnium is only to be considered in a pathological sense, when, in consequence of wear of mind or body, there is a *necessity*, a *disposition*, to sleep, and yet it cannot be wooed to the pillow. A state of pervigilium, or watching, cannot with impunity be extended beyond eighteen

or twenty hours, except in the mindless, thoughtless state of mania. If the mind, moreover, has been in energetic action, the necessity for repose becomes the greater; but if it be slothful, as that of the idiot, there is less need of sleep: the melancholic has lived forty days and nights without sleep. But when the power of sleeping is *often* suspended or impeded, insomnium becomes a very perilous disorder. It were not, indeed, too bold to affirm, that beyond this period, the state of waking or vigil is essentially that of derangement. It may be at first so slight as to be scarcely if at all perceptible, as we may have so slight a bodily disorder that we are not aware of it: still the light disorder shall soon lead to organic disease, as protracted pervigilium may lead to confirmed insanity.

Now, if there be a sudden onset or stealthy approach of eccentricity (not that original or habitual eccentricity which constitutes character), combined with protracted pervigilium, our suspicion as to the health of the mind should instantly be aroused. These are most important moments; active and watchful management is imperative. For, as about ninety per cent, of those treated within the first three or four months recover, and as the prospect of cure decreases in a direct proportion as the months or years increase, so insomnium, as a primal symptom of insanity, is one of deep interest, and we must think the learned author of the "Dictionary" remiss in not having made a special allusion to the point. It is to this end, chiefly, that we have made the subject of sleep prominent in some of our later pages. This protracted insomnium is the result of an immediate physical cause which thus becomes of moment, because acting on important tissues, even as an ulcer on the palpebræ would, on healing, leave the eyelid useful as before, but if occurring on the cornea would impair or destroy the sense of vision. When, therefore, erethysm affects a brain, a thought, born of this unhealthy organ, constantly, incessantly, acting on its tissue like a rolling snow-ball, increases the degree of oppression, and thus resists remedy. This is the secret which explains the apparent paradox that sleeplessness is both a cause and effect of insanity, a sort of self-multiplication from one poisoned germ of thought.

Undue sleeplessness is at first a negative disorder, as it is the privative of sleep, whether we consider it a passive state, or, with Blumenbach and Cabanis, a real *function*. But fresh and unhealthy actions are directly set up, and it soon becomes a positive disorder.

Now, when we have defined true sleep, and reflect on its psychical essence of manifestations, we must, of course, include in the term all its prototypes, inasmuch as each, being abnormal, or in excess, is an indication of the disturbance of the healthy condition of the mind. Hippocrates thus refers to this excess both of sleep and its privative—

Ὑπνος αγρυπνιη αμφοτερα του μετριου

Μαλλον γινομενα κακον
[Both excessive sleep and excessive wakefulness are harmful, being beyond moderation.]

Reverie, is the lightest form, an abstraction or intellectual concentration, and is often the half-sleep, or dozing time, following perfect insomnium. It is, indeed, far more waking than sleeping, and yet the wonderous stories are common as household words, how Mackenzie parodied, and Voltaire and La Fontaine versified, and Condorcet solved abstruse problems, and Haycock preached eloquent sermons, and above all, Tartini composed his exquisite "Sonata di Diavolo," and all this in sleep. But sleep it is not, any more than is that state which is darkened or brightened by a dream, or in which somnambulism plays its pranks, and in which we do not stop our ideas to reflect on them, as in waking reverie. Incubus is next, as it is marked by a temporary loss of power, yet volition (or will) is present. Somnambulism is the complete converse of this, as there is an obedience of action to volition, and yet the senses are passive. In the dream, while the senses are uninfluenced, volition is not obeyed. If we are tickled, we draw up the foot, but do not often wake; so, indeed, we endeavour, unconsciously, to relieve malaise of congestion by altering our position, yet then we may not wake. We say unconsciously, for sensation does not cease; if it did, we should cease to breathe, for the sensitive principle affects the lungs in sleep. The deep sleep of carus, catalepsy, trance, coma, apoplexy, stupor, syncope, asphyxia, are in themselves real disorder, the senselessness being but one symptom of the malady.

Allied to these is the *apparently* deep sleep of a condemned creature before execution—the effect of a *stunned* or paralysed brain. At these varied states we merely glance *en passant*, our chief subject being that form of stubborn wakefulness resulting from morbid activity or continued exertion of brain, which does not yield to the desire for sleep.

Now were it not for the working of mind in the brain, sleep would inevitably ensue, as a physical law, whenever the systemic power was exhausted or reduced to a certain point, even as the plant will sleep on the withdrawal of its stimulus. But if a thought on an interesting subject arises in the mind, the power of multiplying its kind, which is the characteristic of thinking, will not only keep the mind wide awake, but, from sympathy and the force of volition, will exert the same influence over the body, inducing restlessness or a frequent change of position.

If any long-continued strain on the imagination, or intense thought has been indulged in, then this insomnium is thereby increased, for the time of instinctive repose has passed, and disorder has set in. The associations of ideas do not cease with the voluntary effort of attention, but yet continue to play, just as a glare of light intently gazed upon will still be visible though we shut our eyes.

The poor king bewailed the vigil of his crowned head, and envied the mental fallow and slumber of the shipboy on the mast.

"The less men are raised above animal life," writes Southey, "the sounder the sleep is, and the more it seems to be an act of volition; with them, when they close their eyes, there is nothing to keep them waking."

It is vain then for us to try to sleep in this state, for the chain of thought cannot be broken.

"My slumbers, if I slumber, are not sleep,

But a continuance of enduring thought,

Which then I can resist not."

Such was the penalty of Paganini's genius. He said, himself, that lie seldom knew what sleep was, for his passion for music was an all absorbing spell.

Boerhaave also has recorded his own case of insomnium. He had been intently thinking from morn till night on a very deep subject: the consequent insomnium lasted six weeks, during which period he scarcely closed his eyes. This was attended by a state of nervous apathy, until pain indicated a return of sensibility.

Viota was a parallel, (as we learn from Zimmerman,) who, in his paroxysms of mathematical abstraction, often kept awake and ate nothing for three days and nights.

Scipio, during the siege of Carthage, did not sleep for six days and nights. We are informed by Mr. Lay, that the aborigines of China, the Meaou-tsze, are totally unmindful of sleep.

This state then is one of temporary derangement; if often or long indulged in, permanent delirium or insanity may ensue. The brain is intently occupied by its own morbid ideas, and external impression is either a cypher or a chaos. Such the delirium of Manfred.

"In my heart there is a vigil, and these eyes

But close to look within."

The peril to mind or life depends on the degree or duration of the cause. The Dauphin was thus murdered by the constant induction of insomnium by his tormentor. Even Damien said the greatest torment he ever endured, Avas the want of sleep thus inflicted.

We must not, however, measure this abstractedly: the comparative impunity with which intense thought and insomnium are borne by some minds is very surprising, as in the instance of Alfred, Napoleon, Frederick, John Hunter, Pichegru, Wellington.

These great men were also very easily roused, which Wilson Philip says is characteristic of the most healthy slumber.

We have hinted that the passive mind will bear insomnium with impunity. Good cites the case of a maniac who slumbered very lightly merely a quarter of an hour in the day, and yet reached his 73rd year in perfect bodily health. We must be cautious, therefore, not *always* to deem insomnium a symptom of fresh disease, or even likely to induce it.

The effects of insomnium are constantly written on the body. Anthony was one of the sleek-headed men, and "such as sleep o' nights." Cassius, whose restless thoughts kept him awake, had a lean and hungry look. The finale of this indisposition sooner or later may be anticipated. The hot palm, the parched lip, the glaring eye, the pallid cheek, the languid muscle, will alike characterize the midnight watcher and the midnight debauchee,—the latter being, of course, easily recognised by tremor of the hands, the bloated visage, and the moral degradation.

There may, however, be partial insomnium; not that alluded to in the Article, which is merely a *lighter form*. Certain faculties of the mind (our late friend Wigan would say one of the brains) may fall asleep while others wake, as they often seem to do progressively and gradually: of this we have proofs in the illusions, incongruity, indeed monomania of a dream. On sudden waking, too, there is often an incongruity of thoughts, as if there was a *series* of wakings, until, the whole intellect being restored, the jumble is arranged. Thus there may be a fallow of some faculties while others work, and so the mind is preserved: if *all*, however, are kept on the stretch, sooner or later varied degrees of derangement will ensue—

> "Some perishing of study,
>
> And some insanity."

The imaginative brain is the fatal gift, the "don du ciel" [gift from heaven] of that irritabile genus [irritable type], so closely allied to madness. That which is the fine frenzy, or the dream, in a sound brain, will be, in one soft, sensitive, or diseased, the delirium of insanity. Dr. Copland refers to cases of this insomnium ending fatally: of a dignitary of the church who died apoplectic: of a physician who became insane: of a gentleman who was attacked by phrenitis after protracted pervigilium; and we might cite many others.

Insomnium is, therefore, a kind of ὑστερον Πρoτερον [later-earlier, i.e. a reversal of the natural order], the cause and consequence of insanity. In one case, it saps the intellect and makes it mad: in the other, the mad mind not being exhausted by active thought, has no immediate need of sleep. This constitutes the difference between active and passive insomnium, the wakefulness of the thought*ful*, and the wakefulness of the thought*less*.

This erethysm of the mind is often seen in nervous child-bed women, lapsing into insanity. It is either medullary or membranous irritation, or subacute inflammation, yet often subsiding on antiphlogistic treatment; but too frequently, in a delicate and self-tormenting tissue, the phantom, like that of Frankenstein, rises up and destroys its maker.

The insomnium of incipient insanity is not essentially a melancholy state, not marked by a want of or longing for sleep: it is often revelled in, and indulged by the cheromaniac. This is the more perilous form, inasmuch as, like that of the vices of excess, its early path is strewn with flowers. The system seems satisfied with the very lightest repose: like Antaius, it is but to touch the couch, and the slumberer at once rises refreshed, starting up in a moment, when we think him in a fair way for sound slumber.

We can, however, trace its stealthy march, from simple erethysm to confirmed mania.

At the onset, it is marked by eccentric and peculiar *habits*, constantly repeated; such as a picking of the fingers, biting of the nails, a favourite route or style of progression. A young officer, who displayed cheromania in excess, was constantly walking round and round a table in the drawing-room, and picking his fingers almost to the sound of his steps. At other times the patient will dwell for whole pages on the same subject, a little varied, perhaps; as if a phantom were always before him; just as the remorseful or perturbed mind will brood over and ring the changes on one idea. This state is evidently not always painful. An insidious or placid smile plays over the countenance: if requested to sit or repose, there is no wish or acquiescence to do so,—the action seems a safety valve to the irritability, deriving indeed from the brain, or leaving it at rest, or as if there was an instinctive aim to procure sleep by weariness. We know that the brain must be at rest in our sleep: thus, we often slumber in the morning after a restless night and an accumulation of sorrows: the brain becomes quiescent, especially if some monotonous morning sound diverts for a minute the previously brooding thoughts.

This state is marked by *sudden* impulses. A patient will rise abruptly after an hour's repose, and resolve on the most absurd and untimely actions and pursuits—a condition too often disregarded as a mere eccentricity. He should, however, be closely watched, especially if insanity be hereditary in the family.

The dawn, or first impulse of passionate love, is a state of cheromania: the couleur de rose, which it flings over existence is to a certain degree constantly illusive. The lover indulges in his vigil as his chief happiness: the scene, however, if long protracted, changes. Old Burton is full of quaint allusions to the insomnium of love. Chariclea, when she was enamoured of Theogines, "lay much awake and was lean upon a sudden." Euryalus writes to Lucretia, "Tu mihi et somni et cibi usum abstulisti." [You have taken away from me both the use of sleep and food.] Dido was not exempt: "At

non infelix anima Phenissa, nec unquam solvitur insomnos," &c., &c. [But the unfortunate soul of Dido is not released from sleeplessness.]

Unconsummated love then, becomes a disease, and its endurance may well be called a passion, and the cavalier servente of Italy, Patito.

As the poets of all ages have alluded to insomnium as a prominent sign of love sickness, so has the painter displayed the effects of sleeplessness and anorexia in his enamoured youth.

In this incipient stage of insanity, the most strange perversions of moral sentiment, feelings, and expressions are observed,—one of the most prominent being a marked and intense aversion to previously beloved objects. An inversion of thought seems to come on, somewhat as we see in the *extremes* of religious mania, the unitarian becoming a rigid catholic, and so forth. Some sense or consciousness of former error or folly occurs, and then they desire *as far as possible* to get clear of the stigma. Monomania cannot reason *moderately*: mole-hills are mountains, and soon follows on real hyperesthesia of the mind.

The pathology of sleep is a deep study: that of insomnium, the privative of slumber, with its consequences and prototypes, must be equally hypothetical. When, especially, we are alluding to the moral and metaphysical causes, we must proceed entirely without leading strings; we have no *demonstration* to prove or illustrate our conclusions. The hearts of others are prone to conceal the truth, and, if we reason or deduce from our own case or state, it is clear that we do so with a perverted judgment. The deep sources, the exciting causes of sleeplessness, may often be sought in the dark recesses of a sorrowing or vicious brain, as well as in the intellectual, though, perchance, not less perilous labour of the moral virtuous mind. In either case the *texture* of the brain, its power of resisting or enduring mental labour, will constitute an important point; for we believe the cerebral is more concerned than the spinal system in the physiology of sleep. The excito-motory system must be awake, for we draw up our leg if the foot be tickled, but the memory retains no cognizance of it. If it so chance that extreme temptation has subdued to evil courses a mind, whose normal constitution was virtuous and good, the pang of remorse may be excited by a peccadillo,—the sensitive spirit broods over its delinquency, and the climax may be fatal. If the child of genius possess not a brain of firm and energetic texture, intellectual labour will not be endured without a morbid change, the prominent symptom of which will be insomnium, often lapsing into a protracted phantasy or delirium, which, accumulating in its course, will end often in disorganization of the encephalon.

The proximate cause of sleep has been ever a *questio vexata [much-debated question*]. Depressed nervous energy, exhausted irritability, congestion in the cerebral sinuses, afflux of blood into the pia mater, its reflex towards the heart, deposition of fresh matter

in the brain, cerebral collapse, deficiency of animal spirits, *vapor quidem benignus* [a harmless vapor];—these, and many other hypotheses, may be merely convertible terms, and they explain nothing.

That the circulation, quoad *quantity*, is influenced during sleep, we have had even ocular proof: the woman of Montpelier, whose case is recorded by Caldwell, had lost part of her skull, the brain and its membranes lying bare. When she was in deep or sound sleep, the brain lay in the skull almost motionless; when she was dreaming it became elevated; and when her dreams (which she related on awaking) were vivid or interesting, the brain was protruded through the cranial aperture. Blumenbach also witnessed a sinking of the brain during sleep, and a swelling with blood when the patient awoke.

The approach of sleep is marked by those phenomena which tend to diminish the action of the heart, and consequently of the circulation to the brain, and of all functions associated with the circulation.

Then as to *quality*: the varied phenomena of mind are constantly dependent on the crasis of the blood. The unhealthy state of the liver and other organs will indirectly affect the general circulation; every part of the system, of course, partaking of its influence, and every function being more or less deranged. The "influence of black blood on the brain" was made an especial subject in the "Philosophy of Mystery," several years ago, by Mr. Dendy. Dr. Binns has since referred to the point in his work on sleep. The subject, however, was fully discussed in the former work, and unacknowledged in the latter. When the normal or vicarious depurations of the system are interrupted or in abeyance, the brain will soon suffer, and its vessels assume a diseased action. Urea, carbon, or other poisons, will speedily show their influence on the brain.

We may glance, too, at the effect of artificial contamination. This is the record of Dionis, on referring to the first introduction of transfusion of brute blood into human veins:—"*La fin funeste de ces malheureuses victimes de la nouveauté, détruisit en un jour les hautes idées qu'ils avoient conçues; ils devinrent foux, furieux, et moururent ensuite.*" ["The tragic end of these unfortunate victims of novelty destroyed in one day the lofty ideas they had conceived; they became mad, furious, and then died."]

Without asserting, then, that there is any specific vascular action, the crasis of the blood is a most important pathological point in reference to our subject. It must be evident to all who reflect on the rapidity with which psychical changes advance or recede. We may adduce also indirect evidence of unhealthy blood, in the odour and unctuous state of the skin in the sleepless idiot and lunatic. The excretion may be a sort of safety valve to the system or the brain, and indeed we may almost calculate on the degree of derangement from its excess.

The immediate effect of mental emotion of which we are conscious is on the heart. One prominent sign of cardiac derangement is insomnium, from the intimate sympathy, the direct intercommunication, indeed, of the heart and brain. There is no newly excited thought without an immediate impulse of the heart, so slight or transient perhaps, as not to be noticed. A sound, novel or unusual, will tend to keep the mind awake; but if this sound be oft repeated, so as to become familiar to the ear, then it does not *excite* the heart and brain, but rather *tends to sleep*: the secret, probably, of that mental repose and slumber amidst the loudest and most discordant sounds. Some sleep, indeed, seems to be produced by noise and excitement, but the terms are not convertible: monotonous sound is *not* excitement, but a *sedative*. Thus we sleep on a coach during the monotony of its rumbling and its motion: if these suddenly cease, we awake. But let the stoppage be protracted and permanent, that is, monotonous, we still sleep. The bellringer of Notre Dame found his lullaby in the loud ticking of the clock.

Now, if we may not consider the brain as a gland, secreting a thought or notion, at least it is the organ through which that thought is manifested. The idea, then, of an *action* in the brain is as clear as that of an action or function in a secreting gland, and we reason on its extreme derangements, such as insomnium or somnolency, as on enuresis or on jaundice. And this action obeys the laws of organic life; if thought be in excess, the brain is exhausted, and hence disorder, disease, disorganization.

The immediate rush of scarlet blood to the brain is consequent on cardiac excitement: the first effect of this *determination* will be starting, agitation, exaltation of sense, especially hearing. Insomnium is the natural result of this *arterial* plethora or hyperemia of the *systemic* heart.

Wardrop observes that "it is one of the most distressing symptoms which often accompany a disordered heart." And, again, "Those afflicted with disturbance of the heart suffer various imperfections of sleep. When in a profound sleep they sometimes start up in bed, completely awake, and are obliged to remain in the erect position in order to relieve a sense of impending dissolution. They are also subject to frightful dreams." Soon follows, usually, congestion, venous congestion or plethora of the *pulmonic* heart, and then the train of somnolency or intellectual oblivion comes stalking on—stupor, coma, apoplexy, death.

Somnolency or lethargy, however, in a pathological sense, is more allied to waking than to sleep, of which somnambulism and the dream are illustrations.

Hypertrophy and mitral disease, however, seem to induce contrasted effects on brain sleep, and consequently on varied degrees of insanity. Eccentric hypertrophy is the forerunner of cerebral excitement, inflammatory affections of the brain and its membranes. Concentric hypertrophy, inasmuch as the ventricle cannot contain the returning blood, and also mitral disease, as all other states which tend to derange or

arrest the upper circulation, by pressure on the brain or cord, are constantly the remote causes of insomnium, or disturbed sleep. In sleepless maniacs we frequently observe the helix inflamed and tumid, and the eyes blood shot. The relief of the brain from the escape of blood, and consequently of stupor, insomnium, and even recent or transient insanity, is often evident. Epistaxis, hæmorrhoidal flow, or even the gush from an artery on the attempt at suicide will often at once restore sanity to the mind.

Analogous to these moral causes of the heart's increased action, are the mesmeric *passes*: for flushes and heat constantly precede the trance. This trance is not sleep: if *that* occur, the occupation of the mesmerist would be at once gone; it is the result of that congestion, which, like the effect of a brooding sorrow, is monotonous and all absorbing, and of the distraction of the mind from all else which would, through eye or ear, pass into the brain.

As sleeplessness is produced by, so it may, in its turn, induce heart disease, by the *reaction* consequent on protracted pervigilium: hence, indeed, we shall have, as Copland observes, "more or less special influence upon the brain, heart, lungs, liver, &c., according to the susceptibility or predisposition of these organs."

The hypnotist, who asserts his never failing power of producing *sound sleep at will*, is guilty of gross ignorance, or extreme presumption: for hypnotics or the remedies of sleeplessness must be varied according to their varied causes, all, however, being concentrated to one end, the repose of the mind.

If we completely understood the essence or rationale of sleep, we might be able, by reproducing that, to ward off or overcome its antithesis; but our psycho-physiology is not perfect enough to determine the seat of the faculties, so as to enable us to attack the malady, or that one or more of these faculties which, being disturbed or still prone to work, *will not sleep*.

We may, perhaps, hope, if phrenology is ever fashioned into a system, to decide on the seat of a faculty, and if it be disordered, morally or physically, to restore it by some local remedy on or near its seat.

We seem, indeed, to be somewhat progressing, when we can fairly locate mind in the hemispherical ganglion, and consciousness in the cerebral base. This may be, in a degree, illustrated by the effects of situation or relative posture of the head, by which the principle of gravitation acts on the circulation; increased impetus, arterial plethora or venous congestion, inducing, by stimulation or pressure, all the phenomena of sleep, insomnium, and their affinities. When, therefore, the term *neurypnology* is used by Mr. Braid, the circulation must still be deemed the most essential point in the phenomena.

The interposition of the dura-matral processes between the brains must be remembered in our adoption of the position of the head. Hyperæmia of one portion of the encephalon, and anæmia of another, may thus be induced. Now, if all the organs of

the brain were at once stimulated by scarlet blood, perfect insomnium would be the result, a state, probably, of extreme cheromania: if only a certain number, then we shall observe *relative* phenomena, various illusions, for instance, or eccentric actions. For these special irritations we refer to the lectures of Dr. Symonds, of Bristol, which we reviewed in our preceding number. The remedies for sleeplessness may be stated to be either moral, those which act on intellect or passions: physical, those which act through the system; psychical, those which influence the senses.

In referring to the requisites for sleep, the annotator of Hippocrates has thus written close up to this mark: "*tribus opus est ut quis placide dormiat, cerebro temperato, vapore benigno, et animo quieto*." ["Three things are needed for one to sleep peacefully: a well-regulated brain, gentle air, and a calm mind."]

The young psycho-pathologist, according to his metaphysical or organic learning, will be prone to look only on one side of the shield. We must, not, however, implicitly rely solely on moral suasion, or on physical remedy, but adopt a combination of the two; as brain congestion may be symptomatic of heart disease, or the immediate result of mental influence.

It will be our duty not only to *change matter*, but to regard that *something*, ethereal or spiritual, of which we have, at least, internal evidence, and which, by its more healthy alliance with brain may induce salutary results.

Without entering deeply into the reaction of mind and matter, we may observe that thought—self multiplying thought, on a *right* theme, might almost instantaneously change the ganglial molecules: and thus courtesy and kindness, and other psychical anodynes, might eventually weed "the bosom of that perilous stuff" that had poisoned it, and then the seeds of health may be sown on the mental soil with profit.

In our practice we have been constantly convinced of the influence of well-guarded conversation. We do not mean the doling out of a formal homily, but the cautious and placid allusion, even to the wanderings of the patient, at one time yielding or coinciding, at another explaining, in a familiar and cheerful way, so much of the cause as the patient can easily comprehend, or can placidly endure. The sleepless brain may thus be often soothed to slumber.

And this especially at the onset of insomnium, so often the incubation of insanity; for, as we have hinted regarding more severe degrees of mental disturbances, the chance of cure is in proportion to the brevity of the existence of insomnium. The germ of insanity may be thus blighted as it begins to expand.

It is not essential that we should here offer long comments regarding remedial agents; but we must remember that there is a variety of remote causes of brain excitement, and of consequent insomnium, which we must take the premonitory step of removing, ere we may hope to correct a habit or relieve a symptom.

Such are the various organic lesions. For hepatic engorgement, dyspepsia, lodgment in the cells of the colon, ascarides, the remedies are obvious; mercurials, taraxacum, antacids, bitter purgatives, friction, exercise, and the habit of lying during digestion on the right side, or a frequent shifting of the body. The removal of many of these causes, will, by relieving pressure on the heart and lungs, engender brighter thoughts, a shadow will pass from the spirit, and slumber will ensue. The suppression of cutaneous and renal secretions, as well as latent or undeveloped gout, may induce a certain metastasis (?) to the brain, which may be cited as a cause of insomnium. The irritation of acute or inveterate skin disease, especially prurigo, and lichen, and other forms marked by hyperesthesia of the skin, may be also adduced. These torments, especially when they occur during the state of pregnancy, become constantly aggravated towards sleeping time. Such sufferers should be allowed to slumber at any time when the subsidence of pruritus will allow them. The varicose condition of the veins of pregnant women, is sometimes followed, even after parturition, by a most uneasy state, which renders their nights sleepless. The relaxed valves and venous coats may be relieved by bandage and spirit lotions.

In all cases where hyperæmia or congestion is apparent, the loss of blood is often a most valuable antecedent. After depletion, the use of mercurials becomes more certain and effective, that of anodynes is rendered more safe and potent. If bleeding be contraindicated, opiates, of which the most eligible are the acetate of morphia, or the black drop, may be combined with antimony or digitalis, a form which, by inducing diaphoresis and diuresis, as well as by lowering vascular action, will go far to obviate narcotism and other baneful effects of opium.

The endermic method of administering opium, is often of much value, powdered opium being strewed on an abraded surface, or smeared at the outlets of mucous canals. In referring to sedatives, it has been ingeniously suggested, that, in cases of insomnium, where the pupil is expanded, opiates are the most eligible; where it is contracted, belladonna. The asthenic insomnia are easily diagnosed; of course blood must be saved, and the anodyne or soothing modes immediately adopted.

In this form, the combination of seemingly contrasted remedies is often most judicious. Intestinal torpor requires a stimulant cholagogue; a languid yet irritable circulation demands a tonic anodyne; and it is true that we especially observe the advantages of steel and morphia, particularly on convalescence from the acute stage of a malady. The narcotic influence of opium, even in increasing and often repeated doses, which is indeed the most efficient mode, is entirely obviated by the combination of aperients, anodynes and tonics.

In the languid system—concentrated nutrition should be administered, the beverage consisting of sweetwort, or infusion of malt or hop.

Pure air should be breathed by those who sleep unsoundly. The position of the pillow should be regulated according to these two forms of insomnium, the sthenic and the asthenic. In the first, the head should be high; in the second, almost horizontal. In the first, the pillow should be covered with oil silk, especially if cold cloths or sponges are employed; in the second, it may be formed of thin flannel, and filled with hops, especially if the patient be in advanced life.

Regarding some of the mechanical inducements to sleep, we may be taught by nature or instinct. At the onset of slumber, we, often unconsciously, proceed to the adjustment of our position, in order to compose the body, and obviate the stretch and strain of muscle. This may, perhaps, be a second cause or result: the hemispherical ganglion and therefore thought, being quiescent, as well as sensation and consciousness, the spinal system is left to its instinctive and its reflex actions, (just as a paralytic limb is often excited to unconscious action more easily than a sound one); the motive apparatus is then obedient, and the limbs prepare for sleep.

But if the spinal system be *exhausted*, then we have insomnium, and a tendency to twitchings or *fidgets*; a symptom, indeed, which is the first induced by mesmerism, ere the dropping into the trance. The psychical remedies, those which act on the brain, not so much as an organ of thought or reasoning as a concentration and sympathy of the senses, have long been made the subjects of mere morbid curiosity by scientific enthusiasts, and of mercenary extortion by the empirical hypnotist. They are all based on the principle of monotony. A prosy speech or sermon, the ticking of a clock, the hum of bees, the cawing of rooks, the plashing of the waterfall, the repetition of the alphabet, the counting of a thousand, protracted silence, the lullaby of the nurse, darkness—all influence the brain through this principle, and they are thus summed up by Spenser:—

> "Whiles sad night over him her mantle black doth spred,
>
> And more, to lull him in his slumber soft,
>
> A trickling streame from high rocke tumbling downe,
>
> And ever-dringling rain upon the loft,
>
> Mix'd with a murmuring winde, much like the soune
>
> Of swarming bees, did cast him in a swoune."

The mode adopted by the late *Hypnologist*, Gardner, consisted in fixing the attention, by listening to and counting one's own breathing: and this auricular hypnogeny was proved to be efficacious in the cases of many a well-known genius. The hypnogenic process of Mr. Braid is ocular, counting chiefly on the intense concentration of vision to one point.

When this monotony is combined with agreeable sensation, the effect will be more decided. Dr. Elliotson refers to a lady who sank into slumber whenever her husband

rubbed her feet; and the animal magnetism combined with the luxurious abandonment of true affection will, *a fortiori*, induce the same happy slumber.

When a part is richly endowed with nerves, or possesses, naturally, very high sensibility, a slight electric effect seems to be induced by friction: the combing of the hair, especially that on the occiput, will constantly exert an anodyne influence, and we have no doubt that, in the state of hysterical insomnium, gentle friction of the areola of the mamma would often induce a disposition to slumber. "We might here refer to the biological phenomena which have excited so much wonder and credulity; we might tell how Dr. Simpson sent a person to sleep, and commanded her not to wake for thirty-five hours; but we have before commented on these processes, which are all based on the abstraction of the mind from the thoughts or persons, the consciousness of which alike interferes with repose. A thought, an eidolon, or a person, will equally induce an action in the cerebrum which may be the exciting cause of insomnium.

We have thus briefly and discursively commented on a subject of deep importance, as well to the comfort of mankind as to our preservation from various psychical maladies. Our propositions, drawn from experiment and observation, will tend to complete the subject of sleep and sleeplessness, the *physiology* of which we had discussed in former essays. We have waived the recital of cases and anecdotes, many of which might have been familiar to our readers. We profess not to merit the full benediction of Sancho, for the invention of sleep, but we may hope, that we have contributed somewhat to insure or induce for many a careworn and sleepless being, the most exquisite balm of slumber.

[1] *Sleeplessness. Article Sleep. Diet. Prac. Med. by Dr. Copland. 1851.*

[2] *Copland.*

ON SOME OF THE PHENOMENA OF SLEEP AND DREAM

Edward W. Cox
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"We are such stuff

As dreams are made of and our little life

Is rounded by sleep."

So says Shakespeare. The question to-night is—Of *what stuff* are dreams made?

You are at this moment conscious. You are in the full possession of all the faculties of your mind—that is to say, you can control and regulate their action. You can, by the exercise of your Will, cause your thoughts to follow each other in a certain order. You can, as it were, sit in judgment upon your thoughts—accept such as are fit for use, reject such as are useless or incongruous. You can compare thought with thought and deduce rational conclusions from the relationship of those thoughts."

You are *awake*.

What is the "you" that does this? What is *the thing* distinct from the thoughts that are controlled, marshalled, and judged, which so deals with them when you are awake?

We cannot enter upon that question now. It is too large a subject for discussion in this paper. It must be reserved for special examination hereafter.

For the present purpose it suffices that, when you are awake, some entity we call "*You*," or "*I*," exercises an intelligent direction over the process of thought by force of a power we call "the Will."

But suddenly the thoughts, so orderly before, fall into disorder. They follow in no definite course. They flow with no discoverable connection. They wander about in all directions. You try to retain or to recall them. For a moment, perhaps, you succeed and the orderly train of ideas proceeds as before. But soon they are starting off again more wildly than ever. The work of reining them in may be thus performed twice or thrice,

but unless something startles you into wakefulness, they speedily break away from all restraint and are scattered beyond recovery.

You are *dreaming*.

By one who views you during this process your head will be seen to nod, your eyes to become fixed, your eyelids to droop, your limbs to relax. Occasionally you will start and resume a kind of stupid animation. The eyelids are lifted. The eyes exhibit consciousness.

You are *falling asleep*.

For a moment only. Soon the same paralysed aspect recurs and there is no recovery from it.

You are *asleep*.

This condition of the body accompanies the mental condition described. *Sleep* and *dream* are coincident conditions.

The bodily change that attends sleep is a depletion of the blood from the brain, attended by its necessary consequence, a collapse of the fibrous structure of the brain. Of this any person may satisfy himself by noting the very perceptible inflation of his brain that follows upon a sudden awakening. The blood is felt to be rushing into the brain attended by a sense of fullness and expansion.

But what is the *mental* condition? That is the question to which I now invite the attention of the Society.

The subject is a very large one, and I cannot possibly treat of it in one paper. This evening I can hope to invoke discussion upon what can be little more than introductory.

Familiarity has destroyed the wonder of it to us, but what can be more wonderful in itself that the change that is accomplished in a moment from the mind awake to the mind asleep?

Suddenly that which before was real is unreal, and that which was unreal is real. Things cease to become thoughts, and thoughts become things. All the conditions of conscious existence are reversed. The mental faculties that are exercised in the process of reason are in abeyance. The mind is incapable of comparing one idea with another, or of holding any thought before itself for examination or judgment. The experiences of the past have no influence over the impressions of the present. The world without is all a dream (with some limitations to be described hereafter). The world within is the actual world to us.

This entire mental revolution is the work of an instant. It is done literally in the twinkling of an eye. We have not time even to be conscious of the change. There is no moment when we can feel “Now I am awake,” and “Now I am dreaming,” or mark the

very passage from the one condition to the other. The whole state of our mental existence is reversed and yet we seek in vain to know the precise period of the overthrow.

May not this psychological fact, occurring to all of us daily, indicate that to the mind, when temporarily released from the conditions of molecular substance, there may be other measures of time and infinitely speedier powers of action than when it works subject to a material structure? But this is by the way.

What is the change that sleep thus instantly accomplishes in the mental condition? What does it teach?

In the first place, it shows us that the mind does not work as one entire mechanism to produce one result, each distinct thought and emotion being a state or product of the whole mental machine, as contended by Dr. Carpenter; but that certain parts of the mental mechanism (whatever that may be) work separately from the other parts. In the operation of dream there is the manifest activity of some faculties, while others are in abeyance. If action of the whole machine were required for each mental act, dream would be impossible, for the whole machine would wake or sleep together and there would either be the reasonable action of waking or the unconscious condition of coma.

We may, therefore, take it as conclusive, that in dreams some of the mental faculties are active and some are at rest—some probably asleep while others are awake.

The next question is, if in sleep and dream certain faculties are always awake and active and certain other faculties always slumbering or inactive?

After a careful review of all my own memories of dream, I am inclined to the conclusion that every mental faculty is sometimes waking and sometimes sleeping, and consequently that the whole brain rarely, if ever, sleeps at the same moment—that some portions of it are active while others are resting, and thence the variations in the character of dreams, not merely from sleep to sleep, but at different periods of the same slumber.

The important fact of the *Duality of the Mind*, as asserted by Brown-Sequard, and which is either the cause or the consequence of the duplex structure of the brain, in accordance with the duplex structure of the body, will doubtless be found, upon further investigation, to account for many of the hitherto inexplicable phenomena of dream. It may be that, as the brain has two hemispheres, and as consequently all the mental faculties are double, one hemisphere of the brain sleeps while the other wakes, and hence some of the peculiar characteristics of dream presently to be noticed. This certainly appears more probable than that some only of the faculties should be suspended while others are active. In what manner the suspension of the activity of one of our two minds would be likely to affect mental action, so as to explain the phenomena of dream, is an inquiry too large to be entered upon here. I hope to return

to it hereafter. But in the meanwhile I would venture to invite to this question the serious attention of Psychologists.

What, then, are the most remarkable features of dream? Foremost of them is the continuous stream of ideas, by which term I here intend the mental pictures of things. These occupy the greater portion of our dreams. They are not always images of existing objects, for often they are forms which the eye has never seen, but which, nevertheless, are constructed by putting together the mental images of objects that have been seen. Impressions conveyed by other senses than sight are often reproduced, such as sounds, scents, tastes, and past nerve-pains and pleasures. Indeed, whatever has been at any time impressed upon the mind and become a memory may be recalled in dream, either alone or in association with other memories.

Very much light would be thrown on the phenomena of dreams some man born blind, and who, therefore, can have no mental memories of vision, would describe to us minutely what "stuff" *his* dreams are made of. Does he dream that he *sees* objects, or only that he *feels* them? Has he *visions*, and what are they? If any intelligent and educated person, labouring under the affliction of blindness from birth, would favour this Society with a minute account of his dreams, I cannot but think that a great service would be done to Psychology by facts which, better than any amount of argument and conjecture, would show us what, if any, ideas are innate, what are brought to us by the senses, and in what manner the mind uses the impressions of the senses for the moulding of its own productions. Of scarcely lesser importance would be a like communication from the deaf. Do *they* dream of *sounds*? Does a deaf man ever dream that he hears music?

But the ideas or images of objects that flow into the mind in dream are rarely or never isolated ideas. They do not come in a confused crowd, nor do they stand alone. Like the beads and scraps of glass that are thrown into the kaleidoscope, and which every turn of the instrument shapes into a new and definite form, the ideas that come into the mind without order are in dream blended together in shapes more or less connected. In addition to the mental faculty engaged in the presentation of ideas, another mental faculty is employed in the *invention* of the story that links them together. Here are two mental faculties at the least that are undoubtedly awake and active in dream.

It is an unsolved problem if in dream *any* of the faculties are actually sleeping. At the first, glance it would appear that sleep, or some other disability, suspends the activity of the faculties, whatever they be, that give us the consciousness of congruity and incongruity—that is to say, the faculty of *comparison* and that combination of faculties whose joint action constitutes what we describe in one word as *reason*.

In dream there is no sense of incongruity. The most impossible things are brought together and the mind accepts them as realities and feels no surprise. Friends long dead are with us and we wonder not how or why. We do impossible things and forget that they are impossible. We walk upon water, fly through the air, are transported hither and thither without passing through the intermediate distance, and there is no sense of surprise, no consciousness of impossibility. We have the strength of a giant, the fleetness of an antelope, the eloquence of a Cicero, and wield the pen of a Milton, and we never ask ourselves why our present self comes to be so unlike our former self as we were but a moment before! Reason, so prompt, ere we had fallen asleep, to separate the real from the ideal, the true from the false, the possible from the impossible, is in an instant extinguished! The Mind, so sane before, is, in fact, insane now, for in sleep Insanity is the normal condition. We are all madmen in our dreams. In truth, how large a part of our lives is really passed in a state of delusion. The man we call mad is only a man who dreams always. We are all what he is when we sleep. He is only called not sane because he does not become what we are when he is awake.

Although ideas are facts to us in dreams, and we implicitly believe them to be realities at the time of their presentation, and they are usually woven together by some thread of relationship, the mind does not sit in judgment upon them as when we are awake. If, for instance, two or more incongruous objects or a series of impossible events were to present themselves to us in our waking state, we should feel the sensation of wonder and instantly compare them with other objects or memories of objects, and our reasoning faculties would be set in motion to inquire into causes and reconcile the apparent incongruities. But in *dream* the mind entertains the inconsistent images and accepts the impossibilities with the utmost complacency. It makes no comparison between the present object and its recollections of the past and the reasoning faculty is not employed to try the truth of the present appearances.

In what, then, does the *sleeping* mind differ from the *waking* mind?

First, you have lost your control over the action of the mental faculties. Your Will has ceased to direct them. Hence their dislocation and the disorder that attends their actions.

But *you* are still conscious. *You* know that it is yourself that is dreaming the dream. Although the dream creates in you no surprise, you never for an instant lose your consciousness of your own individuality—that it is yourself that is playing the part in the dream drama. Never do you suppose yourself to be some other person. You may dream that you are a king or a beggar, but it is yourself that has risen or fallen. Your consciousness and conviction of identity remain unshaken amid all the impossibilities with which your ideal existence is encompassed by the fictions of your own making. Is not this another proof that *you*, the dreamer, are not the *thing* that makes the dream (for

you cannot be both cause and consequence), but only the recipient of the impression of the dream from the mechanism that makes the dream?

If, then, the individual consciousness continues awake, the seat of the condition of dream is to be sought in some part of the process of mental action between the presentation of an idea and the impression of it upon the consciousness.

What is wanting here? There are two processes by which the waking mind is governed. The Intelligent Self forms the desire, and the Will is the instrument or power by which that desire is accomplished.

In the waking and normal state the brain works under the control of *the Will*.

In the condition of dream, *the Will* is either sleeping or paralysed. Therefore it is that in dream the mental faculties act without control, each one according to its own impulses.

But the dreamer is *conscious* of the mental action, although he cannot control it. The Self is merely a passive recipient of the impressions caused by the brain action. We perceive what the brain is doing—that is to say, the successive conditions into which it is thrown,—but we are unable to control those conditions. The power is wanting by which the Conscious Self controls them in the waking state. That absent power is the Will. But the Will is only a force which something wields. What wields the Will? The Self. Upon what is it directed? The Brain. Thus we have it distinctly proved that the Self is not the brain. We learn also that the Will is not the link between the Conscious Self and the brain. The Self is connected with the material mental organ by some other link, for in dream the consciousness remains although the power of the Will is suspended.

The question here presents itself, wherefore does the Conscious Self accept the impressions of brain action in dream without questioning their reality, their congruity, or even their possibility? It does not so when the brain is awake. *Then* the Conscious Self sits in judgment upon the impressions brought to it by the brain, and is enabled to distinguish between the actual and the ideal, the objective and the subjective. Why not in dream also?

The Conscious Self feels no surprise in dream, however strange the vision presented to it, simply because the condition of its relationship to the brain, as the material organ through which alone it can maintain communication with the external material world, compels it to accept the impressions made upon it by brain action as realities that have, in the normal state of that relationship, a corresponding external existence by which that action of the brain was caused. True, that the waking brain has not unfrequently self-produced impressions, as always they are in dream. But the Conscious Self has learned this fact from experience, and setting its will-power in action, it tries these impressions by certain mental tests, which enable it, usually but not always, to discriminate between the actual and the ideal—the fact and the fancy.

The reason why the Conscious Self does not so discriminate in dream may be thus stated. The power of the Will being suspended in dream, one mental faculty cannot be brought to bear upon another for the purpose of comparison and reasoning as when we are awake, and therefore all impressions received from the material organ of the mind are accepted as real. The process of reasoning requires the combined action of several mental faculties and probably also the united action of the two hemispheres of the brain—or the two minds as Brown-Sequard calls them. If any of those faculties or one entire hemisphere of the brain be sleeping, the process of reasoning is impracticable, and the mental impressions are accepted as real because the test is wanting by which the reality and unreality of mental impressions are determined in the normal condition of the brain.

So far, I have referred only to *ideas* presented in dream—the *pictures* which the brain paints. But the *emotions* are called into action in dream, and the Conscious Self receives the impressions of them also and *feels* them. How is this?

The emotions never come into action capriciously. They can be created only by something presented to them by others of the mental faculties. We do not feel hate, or anger, or love in the abstract. The presentation of some object, real or ideal, by one of the other mental faculties is necessary to the kindling of an emotion. When the proper object is presented, the emotion follows, without the exercise of our Will and often in opposition to it. So it is in dream. The inventive faculties construct the story and the presentation of that story to the emotional faculties excites them to involuntary action. Hence it is that in dream we feel the love, hate, fear, anger, which the incidents of the dream would have excited in reality, the events and persons being accepted as real by the other faculties and by the Conscious Self.

Thus the *emotions* are excited in dream, as they are excited in our waking state, by the presentation to them of *ideas*. Awake, we find love or hate, fear or desire, provoked as often (and even more frequently) by ideal pictures as by real external objects. In sleep the picture painted by the dreaming fancy invokes the appropriate emotions. As the *ideas* in dream pass through the mind without the direction of the Will, so are the emotions excited without control. Consequently in dream the passions and sentiments often prevail with more fury than ever they burned in us in our waking state.

But there is a peculiarity in dream to which I invite special attention, for I do not remember that it has been noticed by any of those who have treated of its phenomena. In dream we are all dramatists and actors. The most stupid, equally with the most intelligent, invent plots, construct characters, and frame dialogues. A dream is rarely, if ever, a simple reproduction of an actual occurrence. It is always mingled with more or, less of fancy. The materials are, of course, quarried from the memory, but these are recombined to make new forms, precisely as it is with the novelist or the dramatist.

Reflect what the dreamer does! For every dream that has continuity his mind invents a story, often complicated and ingenious. The actors in that story are as frequently creations of the fancy as revivals of the memories of the dead or representations of the living. But perhaps the most marvellous feature of this strange psychical performance is the dialogue. Each personage in the dream plays his own part perfectly. He converses freely and in strict keeping with his character, and often the dialogue, as in the acted play, or in the drama of real life, is maintained by half-a-dozen speakers!

What a wonderful process this is! And yet the dreaming mind does it all! That mind constructs a story, invents characters, and improvises a long dramatic scene, in which the whole dialogue is supplied by itself! And this is not a miracle peculiar to the intelligent and educated mind. It is performed also by the most stupid and illiterate. It is strictly true, that every ploughboy is every night at once a novelist and a dramatist, and this, too, of no mean capacity. To me there is nothing in all the strange phenomena of dream so strange as this, or the study of which promises to throw so much light upon the mental faculties and the manner of their action.

But although the mind is the inventor of this acted drama, it is wholly unconscious that the drama it is creating is an invention of its own. That which itself has created it believes implicitly to be an objective reality. It is satisfied that it sees those places and hears those persons, and that the speeches that fall from their lips are their own, ignorant that it is itself the inventor of that which itself is contemplating.

Is not this a second proof offered by the phenomena of dream, that the brain that acts and the Conscious Self that takes cognizance of the actions of the brain are *distinct entities*? Awake, the brain works and the Conscious Self takes notice of its working. That self-consciousness is asserted by the Materialists to be merely the consciousness by the brain of its own conditions. If it were so, the brain would be as conscious of its own conditions and actions in dream as when awake. It is otherwise in fact. In dream, the brain works as in the waking state, but the Self is unable to distinguish the inventions of the brain from the impressions of external objects. This change in the conditions could only be by some change in the relationship of the Conscious Self to the dreaming mind. Such a change implies that they are not identical, but distinct entities. It follows that if there be both the Conscious Self and the mind or brain of whose actions that Self is conscious, the existence of *something* in us, other than the corporeal mental mechanism, is demonstrated.

Thus in the phenomena of dream we find the strongest scientific evidence of the existence of Soul.

A dream is not a desultory flow of disordered images and disjointed ideas; it observes a definite arrangement in the shape of a continuous and connected action, following apparently the same law of association that governs the advent of ideas in the

waking state. It is important also to observe that, as in the waking state, the ideas in dream come *in succession*, two or more never presenting themselves at the same instant. Hence our conception of *time*, which is consequent upon the mental structure that entertains ideas only in succession, one following another. If the mind had been so structured as to entertain many ideas together, we should have quite another conception of time than that we now form. The ideas thus produced by the brain in a stream are presented to the Conscious Self in the same order of succession; and hence that Self, in the normal condition of its relationship to the body, has only the conception of time that results from the successive actions of the brain. But it is something more than probable—it is almost certain—that if the conscious Self were severed from its association with the material organ, through which alone it can communicate with the material world so far as to receive impressions directly, it could perceive simultaneously what through the mechanism of the brain it can receive only in succession, and therefore that the conception of time to such a disembodied self would be altogether different from that which it possesses when informed only through the medium of the brain.

The practical result of this suggestion is that what we call *time* is merely a human conception, the product of brain structure; and that to a being differently structured, and to ourselves when the relationship of the Soul to the body is changed, time may be something altogether different from that which it appears to us now.

And there is, in fact, a very great difference between the waking and the sleeping mind in its conceptions of time. In dream, a whole seeming history will be enacted in an hour which, to have been acted in reality, would have occupied days or even years. It was the notion of Lord Brougham, based upon a dream of long continued action that occurred to him during a brief slumber in court, induced by the drone of some tedious counsel, that dream took place only when in the act of falling asleep or of waking, and not during actual sleep. But this is contradicted by the experience of any person who has been suddenly wakened from sleep, and who will have found his dream as abruptly interrupted. The fact is, that in dream there is no other measure of time than the flow of ideas. When uncontrolled by the Will, the mind produces and presents ideas with incalculable rapidity. The number of ideas is the count of time to the dreamer. If in a sleep of five minutes as many ideas flit through the brain as in five hours of waking, the measure of time to the dreaming, as to the waking, mind will be the number of ideas and the rapidity of their stream. But in the waking state the mental impressions are corrected by past experiences. In dream, the rapidity of the stream of ideas within, and the absence of any correcting impressions from without, combine to cause an action, that lasts in reality but five minutes, to appear to the Conscious Self as five days.

The psychological importance of this is very great. It serves to correct our notions of time by showing us that it is a human conception merely, and altogether different even

in the waking and dreaming conditions of the mind. Faulty notions of time, space, and such like mental conceptions dependent upon mental structure, lie so at the root of popular fallacies, and are so frequent and yet so rarely recognised even by the educated, that some service may be done by inviting attention to the striking proofs of their fallacious character that are found in the Phenomena of Dream.

In sleep, the conception of time, as measured by external events, is not always wholly suspended. The desire to wake at a particular hour often produces the result. But this is not, as some have assumed, the consequence of a measure of time kept by the mind in sleep, for waking during the night, in the absence of an external indication of time, we have no knowledge what the hour is, nor how long we have been sleeping. That waking at the desired hour must be due to some other process than counting in our sleep the march of time. What is that process is a question that well deserves examination.

But my allotted time is exhausted. The subject is so large that I have been unable to do more than touch the fringe of it. The questions it involves, and which, probably, it will go far to solve, are so important to Psychological Science that I hope to return to the subject hereafter. I will merely now shortly sum up the principal arguments of this paper—a plan which I would respectfully suggest to all who may contribute to our discussions, as being the best means of impressing that argument upon the memories alike of hearers and readers, besides assuring themselves of the definiteness and value of their own suggestions.

1. Awake, the Conscious Self controls the action of the brain, which is the material organ through which the Conscious Self communicates with the material world.

2. The power or force by which this Self controls the action of the material mental organ, the brain, is that called THE WILL.

3. In sleep, the action of the Will is suspended, but *consciousness* remains. The Conscious Self perceives, and often remembers, the dream presented to it by the brain.

4. But the Conscious Self receives the impressions of the brain action as they are presented, but being unable, by reason of the suspension of the Will, to bring the faculties of comparison and reasoning to bear upon them, it is unable to distinguish between the ideas self-produced and ideas that are impressions of material external objects. Hence the implicit acceptance of dreams as realities.

5. In dream there is no discerning of incongruity or impossibility. This curious condition is due to the like cause. The paralysis of the Will prevents the calling in of the aid of the "judging faculties," the process by which, in the normal waking state, we are enabled to distinguish external facts from sell-produced fancies.

6. It is a question for consideration whether this may not be due in whole or in part to the *Duality of the Mind* asserted by Brown-Sequard.

7. In Dream, the conception of *Time* is lost. Adventures that appear to the mind to occupy a week are really enacted by the mind in five minutes. This is the consequence of mental structure, which can entertain but one image or idea in the same instant of time, combined with extreme rapidity of the stream of ideas when uncontrolled by the Will.

8. The mind does not measure time in sleep otherwise than by the succession of ideas. It is deprived of the corrections which in the waking state are supplied by external objects. Hence the conceptions of Time in dream are altogether different from our conceptions of it when awake.

9. The severance of the Conscious Self from the mind and its operations, so remarkably shown in these phenomena of Sleep and Dream, are of the greatest importance to Psychology, as proving the non-identity of the Conscious Self and the brain as the mental organ, and therefore as supplying almost conclusive evidence of the existence of Soul as an entity distinct from the material brain.

10. Dreams are inventions of the sleeper's mind. In sleep we are all novelists and dramatists. The most stupid constructs, plots, invents characters and places in the mouth of such, however numerous, appropriate dialogues.

Edward William Cox (1809-1879), also known as Serjeant Cox, was an English lawyer, legal writer, and publisher. He moved to London to become a barrister and held significant legal appointments, including Recorder of Helston and Falmouth and Deputy Assistant Judge of the Middlesex Sessions. Cox founded the weekly "Law Times," and his own newspapers, including "The Critic" and "Bazaar." After retiring from publishing, he continued to write l aw books and, and contributed to the *Transactions* of the Psychological Society and the London Dialectical Society. He was also the author of *A Monograph of Sleep and Dreams, their Physiology and Psychology* (1878).

DOES THE MIND EVER SLEEP?

E. M. Chesley

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1. What is mind?

Mind may possibly be regarded as having been gradually evolved by and through the countless forces and instrumentalities of matter. In this view it becomes itself matter, but matter highly sublimated and purified. Nor is it necessary to doubt mind's immortality or high moral and spiritual attributes in consequence of a recognition of this theory. God, the all powerful spirit of the Universe, may have chosen to develop out of matter the most marvelously beautiful and refined organisms. And can we justly doubt his ability to do so? The whole Arcana of Nature may have been designed to individualize and perfect human spirits. The energy of the mind may form a part of the indestructible energy of the Universe, so ultimated as to preserve forever its distinctive individuality. If this view be the correct one, then the analogies of nature in the matter of sleep would be readily applicable to mind. If sleep, as a temporary cessation of activity, were a common and natural phenomenon of other forms of matter, it would probably be so also of mind, unless such important differences could be shown to exist as to preclude analogies on this point.

The more general view taken of the mind is that it is immaterial, that it has activities and laws peculiarly its own which will more fully reassert themselves when the mind severs its temporary connection with body. In this view, the presumption might possibly be that mind never sleeps. Yet the general analogies of nature would probably still be applicable to it. All the Divine laws in nature tend toward oneness. Between the so called lowest and highest of them there are incalculable correspondencies. Mind would still be connected with matter during its earth existence and that which we could definitely know of its attributes and manifestations would be known through this connection. It is however to be presumed, that, whatever may be the supposition as to the nature of mind, the problem of its sleep or non-sleep cannot be solved with absolute certainty.

2. What is sleep?

By the sleep of a vegetable or an animal we do not understand that there is a total cessation of energy. Were this the case, in all probability death would ensue, or, in other

words, the individuality of the plant or animal would be destroyed. In the sleep of the human body, certain functions, as of respiration, circulation, renewal of nervous material, are still carried on. A form of sleep is exhibited in the hibernation of certain animals; but it never consists in a total cessation of the life forces. A tree may be said to sleep during Winter. The externally manifested activities of the tree cease; but in the interior, among the cells, work of the finer kinds is constantly going on. Otherwise the tree would cease to be positive and begin to decay. Even in the case of that deepest of all vegetable sleeps, the hidden life of the seed, it is believed by able Botanists that insensible activities are ever present which could be discerned were our senses less material, that is, less grossly material. It is believed that the watch spring of seed life ever slowly unwinds. Hence it appears from what we can observe with reference to its general phenomena, that sleep consists in a cessation of the external and more marked manifestations of energy, but does not imply a total cessation of all the active functions of any organized existence.

3. What is the sleep of mind?

In the light of these principles, if the mind does really sleep, it should not assuredly be supposed from this that all its marvelous energies are perfectly stilled. Could it then exist? But the mind may have other interior forces, other important life functions beside those made known and exercised during our waking hours. The former may constitute its real and essential life, while the latter may be but certain forms of its energies which may altogether cease during sleep and yet resume their wonted activity on awaking. May we not draw an illustration from the needle of a compass? We do plainly perceive through our gross senses the constant movements of this bit of magnetized steel whenever the box which contains it is put in motion. But when the box containing it is perfectly at rest, we do not perceive that fulness of invisible energy which is still in the needle, holding it fixedly pointing toward the magnetic pole. Just so may it be when the body or casket of the mind soundly slumbers. All the usual and sensible activities of our waking moments may cease while at the same time the mind may be charged with strong and invisible power. The question now arises, what are these external, sensible, more marked forms of mental action which may be considered to correspond with the visible movements of the magnetic needle or with the external life manifestations of a plant or animal when not sleeping. What else can they be if they are not all the forms of our waking consciousness? Consciousness is manifested in connection with the brain and nervous system. It is well known that pressure on the brain stops all consciousness. When the pressure is removed, the mind at once resumes its usual train of conscious thought and feeling. Is not this then a proof that consciousness as a form of energy may cease entirely, so far as we know, whilst at the same time, the essential life of the mind still remains?

This then will be our endeavor, to show that normally during slumber the mind is unconscious, that it neither thinks, feels nor wills. Just what that essential life-energy which does not cease with consciousness may be, we have as yet no means of determining. It is commonly supposed that a constant consciousness is necessary to the mind's continued existence. This does not appear evident if there be force in the above considerations.

4. Does the Mind Sleep?

The first objection which would naturally be presented to the theory of the sleep of mind would be the fact that during sleep the mind is, *sometimes* at least, consciously active. Hence it is argued that it may always be so active, but that we may not always remember our sleeping thoughts. Is it not probable however, that dreaming is a consequence of imperfect or abnormal and not of normal and sound sleep? When all the bodily and other conditions are favorable for full and refreshing slumber, we do not, I think, experience the phenomena of so-called sleeping consciousness. On the contrary when we overwork or overstimulate the body, or when anxiety of mind has affected our nerves, we are very apt to sleep imperfectly and hence to dream. Does not dreamless sleep refresh us more because it is sound and normal, because it is a sleep of mind and nervous system. The facts of somnambulism do indeed seem to prove that the mind might be active during sleep and yet not remember that activity afterward; but is it really the fact that the mind is conscious always? The natural and prima facie conclusion is that in dreamless slumber the mind is unconscious. We know nothing positively to the contrary. It is according to the general analogies of nature that the mind should take this temporary rest. The idea does not necessitate the non existence of that mind. More over those peculiar phenomena of sleep which are usually adduced as an evidence of mind's being ever active can, I think, be quite as well explained on the opposite hypothesis.

Let us now consider some of the arguments of the French philosopher, M. Jouffroy, as quoted in the *Metaphysics* of Sir William Hamilton. The first of these attempts to demonstrate that the probability is that the mind always wakes. It is based on the assumption that "when we dream we are assuredly asleep." But would not this statement first require proof? Is it not probable from considerations before presented that dreamful sleep is not normal and sound sleep?

The second argument of M. Jouffroy is, when condensed, as follows: "A stranger visits Paris and is, for the first few nights, unable to sleep soundly because of the noise of the streets. After some time his slumber is not disturbed by this cause. This is not because the senses, becoming accustomed to the sound, fail to arouse the mind as at first. They do receive the same impressions on the first night as on the hundredth and transmit them in equal vivacity to the mind. That the senses do not become dulled to

the sounds, as some might imagine would take place after the first few nights, is shown from the fact that habit often tends to render the senses more acute, as in the case of the Indian. The difference can originate only in the *mind*. This, ever active in sleep, on the first few nights receiving unusual impressions, arouses the senses to inquire what is the matter. But after a time, learning by experience of what external fact these impressions are the sign, it ceases to arouse the senses for a useless explanation. The facts of distraction and non-distraction in the waking state finely illustrate this theory. Thus, at first, one cannot read in the midst of distracting conversation,—but after a time can do so with ease. It is not the senses which become accustomed to hearing these sounds and end by being less affected by them. But it is because *attention* at first occupies itself with the sounds referred to and *chooses* to neglect them after they have become familiar." From the above we see that the explanation given by M. Jouffroy to account for the fact referred to is that the waking mind becoming acquainted with the noise, intelligently decides that it is needless to arouse the man. The whole strength of his argument turns on the sole sufficiency of this explanation. It will be my endeavor to show that there are grave objections to his explanation and also that the facts can be at least equally as well accounted for on the supposition that the mind sleeps. M. Jouffroy states that the ever conscious mind does not arouse the senses after it becomes aware of the nature of the noise. Well then, let us suppose that this stranger had taken great pains, before retiring the first night in Paris, to in form his mind thoroughly of the important nature of those street noises it was about to hear during its sleep. Would the stranger in that case have slept on because his intelligent and waking mind would find it unnecessary to arouse him? Certainly not. If the theory is correct, why not? But again if all that is necessary is that the sleepless intelligence within become acquainted with the nature of the sounds, why should it not become sufficiently informed on this point, at least after the experience of the first night? Plainly more time is necessary. And this leads to another explanation of the phenomenon. It is simply that the *sleeping* mind and brain and body, having, according to a *natural law of habit*, become accustomed to the new conditions after a few nights, varying with the individual, can sleep on without being necessarily aroused by the noises. The body can become accustomed to sleeping on a hard board. The nervous system can so conform itself gradually to new conditions that it can sleep under the influence of strong stimulants. So, may it not be possible for the whole mind to become accustomed to slumber on amid noises at first disturbing and distracting? The actual organs of sense need not become dulled as M. Jouffroy appears to suppose; but all the nervous, sensational and mental activities concerned in the recognition of those street noises may become much less sensitive to them after a sufficient time, because of the peculiar effects of habitual experience upon us. Just *how* this may take place we may be unable to explain. But M. Jouffroy would object to the dulling of the sensational activities from habit because they are often sharpened from the same cause. To which it may be replied that our sense-perceptions may be both dulled and

sharpened through habit according as we may choose to encourage or oppose any given influences affecting our sense faculties. The sense faculties of an Indian are rendered acute because he throws his whole soul into the line of sense-perception. On the other hand a philosopher might be surrounded by the same sense-culturing influences and opportunities, and yet, by engaging day after day in profound metaphysical meditations, might soon become the more and more indifferent to the former. The case of the Paris stranger is analogous. He strove to shut out the noises. Does not then the wonderful power of mind and body to adapt themselves to varied conditions furnish a satisfactory explanation of the phenomenon in question, without supposing the constant consciousness of mind?

Again it is asked by M. Jouffroy how we can account for the fact of nurses being undisturbed by all noises foreign to the patient and yet awaking by the slightest movement of the patient. How can this be explained unless the mind never sleeps? The mind of the nurse is evidently in no condition to slumber soundly. It only partially sleeps. Well then, the little conscious activity which it does have in sleep is probably all constantly directed toward the affairs of the patient, thus becoming of course more oblivious to all other matters. The case of the footman of Halle who always awoke before reaching the small foot bridge with steps, as given by Sir William Hamilton, is in point here. What conscious activity of his mind was at work was all directed toward awaking at that one place and time. This proposition is a very conceivable one. For have we not ourselves, in our waking moments, become so absorbed in our subject of contemplation as to be largely unconscious of the great world of forces about us? Therefore the case of the nurse above referred to does *not* prove that the mind cannot be wholly unconscious under conditions *favorable* to sound slumber.

Finally M. Jouffroy refers to the fact of our ability to wake at an appointed hour, when, before going to sleep, we have made a firm resolution to that effect. He argues that the mind must measure time during sleep, otherwise the phenomenon would be inexplicable. It is indeed evident that the mind must retain its power of measuring time on these particular occasions. But can it therefore never sleep? Here again just as in the cases before referred to, what conscious activity of the mind is or exists, is all directed to one matter, that of time. Strangely enough, M. Jouffroy himself admits that after a night passed in the effort to awake at a given time, we do remember that during sleep we have been constantly occupied with this thought. On these occasions, he admits that our slumber is light and untranquil, the mind constantly disturbing the senses. In these admissions may we not find the explanation of the strange fact? Let us suppose that on one of these occasions we chance to be very tired, all other conditions favoring sound sleep. We shall probably then sleep soundly and in consequence of this, fail to wake at the hour.

Egbert Morse Chesley (1850-1917), was a self-described “metaphysical teacher and practitioner, and lecturer on the ‘New Thought’” and a “student of Oriental philosophy, theosophy, and occultism.” He was born in Nova Scotia, but lived much his life in Boston, where he was one of the organizers of the Metaphysical Club, and active in the Church of the Divine Unity and the periodical *The Mental Healing Monthly* .

SWEDENBORG'S VIEWS ON THE QUESTION: DOES THE MIND SLEEP?

B. G. Child

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Being neither a philosopher nor of literary occupation, might excuse, if not forbid, appearing in your pages; but I have a strong desire to present thoughts of others, who have just claims to be heard, on queries propounded by your correspondent, E. M. Chesley, in the January number.

"What is Mind?" "What is Sleep? ''

As to what is mind, he sets about showing *how* it may have been evolved from matter. If it is an answer at all, it is not to the question asked—*what*, not *how* evolved. Perhaps the solution of one is not less difficult than the other, yet distinct, and should be kept separate. E. M. C. says, "Mind is evolved from matter." Another says, "It is spirit." Well, what the one and what the other? Change of designation does not help us. Somewhat of its modes of operation, known, may help us; and perhaps this is ail that can fall within finite grasp. One demonstrable fact is, mind is dual, of two essential elements, spirit-heat and spirit-light. Consciousness and observation settle this much, viz.: *heat* of love, *light* of thought. This one knows in himself, and sees it universal in man and beast.

Now, that heat of love and light of *understanding* are elemental in matter, I do not believe, nor that anything latent in matter can evolve love or understanding, nor anything common, or elemental between mind and matter. Not accepting your correspondent's premises nor his conclusions therefrom, analysis of either is unnecessary; but with becoming deference I will attempt to show the opposite.

We suppose it conceded that man is not man by virtue of face and body, any more than by virtue of his coat and pantaloons, but that man is man by virtue of his *will* and *understanding*. Up to one degree below these, beasts possess all in common with man on the physical plane, on which plane, the difference being *not in quality*, but in degree of development. "To the extent of beast-instinct," says Swedenborg, "it is identical with that of man, in whom, if the higher degrees are not opened, man is but a beast." Man is man, by possessing two degrees of mind above the brute. If these do not subordinate the animal degree, man is not man proper, but remains a brute. Love of reputation, and

other restraining forces, mitigate his brute nature here, as all observation affirms, but not hereafter, when restraint is thrown off. The same author says: "The human mind is constituted of three degrees, altitudinally, i.e., one within the other—natural, intellectual and affectional; each discrete, not continuous, one into the other." It is a question, I believe, whether life in any form is void of sensation. We know it is not, even in some plants. *Sense* is a property of mind. *Matter*, in itself, never lived, therefore cannot die; hence, man's body is just as dead, while the man spirit is in it, as it is when he is gone out of it; as the statue has no more life while the artist's hand is busy upon it, than when in the quarry; and material organs of sense have as little sensation in themselves as the block of marble. Some author says all sense, in whatever organism, is spirit. Man, beast, or tree lives, by life derived to it, from one only source. Life is one, in infinitely varied forms. These higher degrees are absolutely sun and moon, in man's spirit, or mind expanse, of which, by correspondence, the natural sun and moon are but effigies, mere garments of life. He clotheth himself with light, as with a garment." The sun, of itself, has no more life in it, than the blade of grass it mediately creates. If there be no spirit-sun in our moral and intellectual expanse, whence come the heat of affection and the *light* of understanding? God tabernacles in man, beast and shrub that burns and is not consumed but lives only by his presence in it.

By common consent, the Christian world affirms that man is born a beast, and *therefore* must be born again into higher and more interior degrees of mind, or go out of the world as he came into it—a brute. The natural or seminal degree is continent, in or on which the higher is to be inseminated by education and moral culture. "Learn of Me and ye shall not walk in darkness."

This is *how* mind is evolved—born. It is less marvelous, so to speak, than the birth of the brute-part of humanity, because we see the process, and are instrumental, in part, of its development, or birth, into higher and higher truth. We could quote very much more from that wonderful man, Swedenborg, showing sharp and heaven wide distinctions between mind and matter; that man is man by virtue of *moral* rationality, not by mere intellectual rationality; and not by virtue of his face and body, any more than by hat, coat, pantaloons and boots; and the one is as likely to be resurrected as the other.

The two lower degrees of the mind, if subordinated to moral obedience, to moral law, by subservience of the lower to the higher, then the lower is resurrected into unity with the highest; and this, I take it, is resurrection of humanity-proper, out of beast-humanity into true spirit-manhood organization. We will attempt an illustration, commonplace, it may be, but to the point, I think. Ambition is a universal passion. Select a young man, fired by this passion to reach the pinnacle of fame, by his art in sculpture, new and absolutely unique: thus he stands on the outermost confines of the known, heard of or conceived in that art, and explores beyond. What, and where is that beyond? It is called imagination. What is that? It is seeing images in spirit-form,

through the spirit-eye, in the spirit world. It does not see what does not exist, does it? No; the field and forms are infinite and substantial as eternity itself. This, then, is the field this artist explores—no ice-field bars the voyage of discovery of a new image—to find a spirit-image in that infinite picture gallery, from which he can take one step beyond the hitherto known. He seizes this *beau ideal* perfection of beauty, to ultimate in marble by which his cunning shall achieve the coveted end—*fame*. This end-cause sets in motion all subsequent instrumental cause, by which to reach that end. It explored and seized the *beau ideal*; it seized the block of marble; it ran down through his arm, through his mallet and chisel; it nerved it and wrought off every chip. The last touch given, where is it? It is not in the block or statue; it returned, the instant it reached that goal, to itself in the form of gratified ambition. Now, is there anything in common between that *end-animus* and block, or statue? Could the block itself evolve first or second cause of its ultimation into a statue? The spirit-pattern is an eternal verity. Time shall dissipate the marble statue as the dew of morning.

"What is Sleep?" Like all phenomenal consciousness, a name, with most of us, substitutes itself for knowledge and philosophy of the subject named. Sleep is supposed to be both a psychological and physiological alternation of *two* states of *two* subjects—mind and body: whereas, but one sleeps; the other, as active in sleep as in waking, retires from the controlling activity of that which sleeps. This activity we call dreams. Life cannot suspend and resume, at will, itself; neither can it weary. If it could, considered in itself, it could die, which it cannot. Where, or how, it retires from *conscious* relation to its earth-body, is not so easily shown: yet *can* be shown, to a willing student. Its relation to the mundane is for inception in swaddling clothes, organization or continent-vessel for *educational ends*. In waking state, mind is as unconscious of the body as in sleep. In such state, where is it? Is it not where affection and thought are? Where is that? In a world of spirit-affection and thought. Sleeping or waking, the body cannot localize mind, but mind can localize itself in an instant at the remotest star in the firmament. Space, hence, is but an appearance. As affirmatory of this, I will cite a transaction in a dream, which may be familiar. A gentleman, in Liverpool, on going to bed, looked at his watch as he lay down. He immediately fell asleep, and dreamed he received a dispatch from New York, stating that his presence was required immediately, to dispose of an important matter of business. He set about preparations to be absent, took steamer, landed in New York, transacted the business, took the steamer again and returned to Liverpool. Some little disturbance awoke him; he looked at his watch, and found that he had slept just five minutes. The time required for all this would have been three months. This is conclusive that thought is not predicable of matter, space nor time. Nothing can be more manifest than that mind cannot sleep, because it cannot in itself fatigue nor suspend activity. What sleeps? I will risk an answer. The animal contingent or instrument of mind sleeps, not from a real, but from

apparent voluntary, or self-moved activity. The machinery squeaks as a dry journal for lack of lubricating, nervous fluid. We feel that squeak, if we do not hear it, and it requires time for another set of activities to obtain and apply that lubricating, nervous fluid. The machine must stop, wait for this. The interim necessary is called sleep. A beautiful writer, Prof. Geo. Bush, late of New York, says: "The brain is fountain and almoner of this nervous fluid during sleep." The great Swedenborg says: "The rear, as distinguished from the frontal, never sleeps, being the organ of the affectional, as distinguished from the rational—frontal—which sleeps from fatigue on its watch-tower. Affection is the driver; thought, the team, driven, distinct in the finite; a unit in the infinite man—Christ—the ease of all life and all forms. It is dual, of necessity, in the ultimate man and woman; neither sharply one nor the other. If they were, one would burn up, the other freeze up, in an instant; hence, each is only part man and part woman. Marriage, *perfect*, restores it in image-unit; hence, likeness of its creator in form; and in turn, apparent procreation of their own finite image and likeness (children). "I said, ye are gods." All mind, affection and thought, is derived to the finite image by influx of the Divine, mediately, except, perhaps, the communications of the prophets; because they say, "Thus saith the Lord," direct. This is very peculiar by John, in the Revelations given through him: "I turned to see the voice that spake to me." He heard the voice, as behind him. Swedenborg says: "All spirit influx is through the occiput, into the cerebellum, thence into the cerebrum;" hence, John *turned to see* the voice. Doubtless, it appeared to him as audible, from a person, standing behind him. The matter communicated was wonderful and peculiar; the mode was not, it being according to universal law. Thought is spirit-speech, no less than when clothed with audible, articulate sound; and no less flows to him from a source *outside himself* as thought, than when another person bodily stands before him, and communicates thoughts he never knew before, and never could know but from a source out side himself. To *conceive* a thought implies power to execute it; aye, a universe of thought-forms, and this, in dream as in waking, rationally alike. Is not every form in the universe God's thought-form? Does not prototype-life-form project its shadow in material nature? If not, from whence? Can posterior beget prior; type, its prototype? If a blade of grass, then a planet. As said, life is *one* in a universe, as in a molecule. When it is said the cerebrum is voluntary and the cerebellum involuntary, it is not meant absolutely, but physiologically. Nothing is *voluntary* but life itself; not even law, physical or otherwise, is voluntary or independent of a will-power that controls it. Many believe the universe created, and then set in motion like a perpetual-motion machine, and abandoned; but not a sparrow falls, not a hair of the head, not an atom in the sunbeam not specifically controlled, equally as a planet. Philosophy might teach the skeptic this fact. The whole unit is constituted of particular units. You must govern the particular, or you cannot govern the general; because the general is made up of particulars, each of which, in

itself, is a general, therefore *independent* of any extraneous law; other than the infinite law within itself, governing the general through *and by its particulars*, proximately.

Unless somewhat is known of the true *relation* of mind and matter, nothing can be truly known of either. The past generation of Christians has shrunk from penetrating into the rationale of psychology and physiology, lest the truth of one should *destroy* the truth of the other. Happily, that day is gone by. The Christianity of all men should be most willing to investigate *all* truth; and if it dissipates his religious dogma, he is all the richer for his loss. The doctrine of evolution recently put forth, shocked the Christian world to its center. If true (and no rational man can doubt it), it necessarily affirms a spiritual evolution as its *cause*; for one cannot occur without the other; and if true, it is no cause of alarm. Alarm results from these great philosophers discovering but half of a truth. It is a general conviction of those called Swedenborgians, that man had an animal mother, but not an animal father; similar, though higher in grade, was the inception of Christ in the womb of Mary, the Virgin. Philosophers are ridiculously shy of committing themselves in avowal of a supreme *spirit-cause*. But this is aside. Christians need not be afraid of science, but take it as a lighted torch down to explore the foundation rock of their hopes, which, if shaken by true science, had better be thrown to the wind. Science is Nature's correspondence of form, to its prototype spirit-cause. This, and this only, is foundation science; and that, so-called, if not rooted in this, is not science proper—"arcana of nature." Everything natural refers itself to spirit cause. Physiology, dissociated with spirit, is like a sunbeam cut off midway from heaven to earth. The generally received theological philosophy cuts asunder God and his universe, lest it should secularize its Creator; as if scientific truth were not equally *religious* truth. This, more than any other cause, perhaps, renders nature opaque indeed, in another sense than mere mundanity; religiously extinguishing light in the burning bush, at sight of which Moses put off his shoes in holy awe and reverence. Every other bush in the universe is equally a burning bush. If our spirit eye is opened to see the life fire within it, then the bush (nature) is not opaque. In them, "they are a tabernacle for the sun, which is as a bridegroom coming forth out of his chamber, and as the strong man to run a race, and there is nothing hid from the heat thereof;" i.e., the fire in the bush. Its prototype spirit-bush is the strong man that runs the race. Could the bush run (exist) without it? The natural sun is as sackcloth of hair, dead in itself, the clothing only of the true light and life with in it, the out-born image and likeness of its Creator. As forms in nature are image and likeness of their mediate proximate Creator, can anything be more intimate than the Creator in his image? Then why not recognize Him *in* the forms outborn from Him? Is He not continuity of life in all that lives? Yet, by an imaginary *sacred remoteness* they bow Him off His throne, and out of His dominions, as if knowledge of Him destroyed awe and reverence for Him; so setting an "altar to an unknown God." God has no necessity for a vicegerent, other than the "bush." This may

be unnecessarily extended, but recognition of somewhat of fundamental principles is quite necessary to correct knowledge of the subject in hand—"What is mind?" "What is sleep?" The first I attempted with little satisfaction to myself, and perhaps with less to others. For whatever success, if any, I am indebted to the greatest metaphysician, I think, of which the world has any knowledge, Emanuel Swedenborg, from whom we could make a book of quotations; but one or two will suffice, and these only on the psychology of sleep. "Sense in general, or general sense is distinguished into voluntary and involuntary; voluntary sense is proper to the cerebrum; involuntary sense to the cerebellum. These two general senses are joined with man, but still distinct. The fibres issuing from the cerebrum exhibit the general voluntary sense; the fibres issuing from the cerebellum exhibit, in general, involuntary sense. Fibres of this double origin conjoin in the two appendices called Medulla Oblongata and Medulla Spinalis, and pass through them into the body and form together its members, viscera and organs, and gird about the body as the muscles and skin. The organs of the senses receive mostly fibres from the cerebrum; hence, man has sense; and hence, motion, according to will; but the parts within that girding, or enclosure, called viscera of the body, receive fibres from the cerebellum; hence, man has no sense thereof, neither are those parts at disposal of the will. From these considerations, it may in some degree appear what sense, in general, is; i. e.: General voluntary sense, and general involuntary sense. There must be a general, or there cannot exist or subsist a particular. Every particular is circumstanced according to quality and state of what is general sense and motion, with man." "Waking state, by waking conditions of the cerebrum, is all dependent upon it: as this holds the voluntary principle, in a kind of erect tension, over the whole body, by a continuous supply of the nervous fluid, of which the brain is reservoir and almoner. The effect is, the whole structure is kept in comparative uprightness and vigor; the interstices and fissures are kept open, a freer passage between them, in a state opposite to collapse.

During sleep, on the other hand, they are in a measure closed and almost obliterated, by approximate parietes, or walls. The two conditions, being represented, somewhat, by a number of sacks, filled and emptied. Collapse of the cerebrum causes corresponding collapse in the lungs, bringing nearer together the loosened vesicles, or air cells and obstructs breathing; this occasions stertor, or snoring. For the same reason, the foldings of the brain lose tension and become flaccid. There is dull stupidness, after waking; and after several yawnings and stretchings, a requisite tenseness enables them to be controlled by the will. The string must be tightened, ere it will speed the arrow, through the day. During sleep, this order is reversed. The cerebrum yields up the empire to the cerebellum, which governs the involuntary—the lungs, the secreting and assimilating processes ever going on asleep, as awake." "I have been instructed," says Swedenborg,"

that the cerebellum is awake, when the cerebrum is asleep." Having within it, a spirit *will* power, controlling the whole internal economy. It is not left to go on of itself.

A few words on the philosophy of dreams.

The understanding is a form of the esse=will. "Will is love." "Love is life." The I or ego: It cannot sleep, or intermit activity. It *appears* to withdraw, in sleep, from control of the understanding, physical machinery of which *wearies* from friction. We do not hear, but feel it squeak, like a dry journal, for lack of lubrication,—lack of nervous fluid,—which must have alternate time for generating in sleep, as for expending, in wakefulness, on its watch-tower. As to how the nervous fluid is secreted, the inquirer is referred to Swedenborg's "Animal Kingdom." Of myself, I pretend not to know. Its showing is too extended to be introduced here, but we hope every one will do himself the benefit of turning to that wonderful work, without which, much here will appear crude. Where he describes the lacteals, he says: "Every fibre carries with it the animus, or affection of its parent cerebrum or cerebellum; consequently, different kinds of lover desire, hate, loathing, longings, antipathies, and all their various states. The mesenteric fibres, animated by the brain, are what command and cause the delicate mouths of the lacteals to seize whatever desired, and reject whatever disliked; and apply their little lips to drink, as desire prompts, or corrugate, retract and close their orifices, in disgust." None can suppose these wonderful operations carried on without intelligence. The cerebrum is *asleep*; hence, it is a hidden wisdom in the *affections*, called, the "involuntary," or the cerebellum. Is not this "The stuff dreams are made of?"—wild and tumultuous, yet more sharply distinct and vivid, than waking thought? Absent, the volitive understanding? No; not absent; *asleep*. This interior will is wide awake, full of fantastic life. We have shown, man can not originate thought, when awake; less, if possible, when asleep. Dream is thought. Where does it come from, and how? By influx from spirits—"their name is legion"—about us.

April 7, 1877.

SLEEP AND SOMNAMBULISM

M. Regnard [Translated From the French by the Marchioness Clara Lanza]

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A lecture delivered before the Association Scientifique de France.

Ladies and Gentlemen:

When the eminent *savant*, who acts as President of your society, requested me to talk to you about Somnambulism, I frankly own that I hesitated for a long time before accepting his proposition. It almost seems as if there were things in Science which we should leave undiscussed, subjects which a prudent man never takes upon himself, the task of exposing dangerous topics, in short, with which it never benefits one to meddle. Somnambulism, or animal magnetism, as it is still called by persons who persist in employing an erroneous term, certainly belongs to this category.

It is a mystery, inasmuch as it is only known by its effects, and it has always struggled, from remote ages up to the present day, against two classes of people—dupes who believe all that is told them, and charlatans who seek to impose upon the world.

I made this observation over and over again to myself, scarcely desiring to class myself among either of these sets; but one thing alone decided me to address you. I knew that I should speak to an audience at once kind and enlightened, one accustomed to listen to scientific truths, and to master the facts submitted to it. I could not doubt that the rich discoveries recently made in physics had taught you to be astonished at nothing, and to renounce nothing *a priori* in the dominion of Science. You should, therefore, place yourself in precisely the same position in regard to Physiology and Medicine.

In the short space of time reserved for me, I shall consequently endeavor to the best of my ability, to teach you what intelligent men accept and profess relative to that singular nervous malady called Somnambulism.

Gentlemen, our immortal comic poet, Molière once said that opium makes us sleep because it possesses soporific properties. This phrase, although apparently a bitter criticism upon Medical Science, is in reality a definite, exact and complete expression of

a scientific fact. Opium makes us sleep because it possesses soporific properties. It is impossible for us to say anything further even at the present day. For should we observe that it makes us sleep because it congests the brain, we must add also that this arises from the fact that it possesses the faculty of causing congestion. This, however, is not a solution of the problem.

These things you may say however, have nothing to do with Somnambulism, but it was necessary to make the foregoing remarks in order that you might fully understand the aim and significance of this lecture. I shall place facts before you, show you experiments and, I trust, gain your conviction. I shall prove everything to you, but explain nothing. Science is bound to substantiate facts, determine the conditions in which they occur, but it is not required also to furnish the explanation. Why does a body that we let slip from our hand fall to the ground? Why is the earth attracted by the sun? Why does oxygen unite with hydrogen? Why does one piece of iron surrounded by a galvanic current attract another? We do not know. We see that these facts exist, we can prove them, but we cannot explain.

Why then should we not treat Somnambulism in the same way? This nervous affection only seems extraordinary to us because we are not accustomed to it. It is infinitely less strange than the physical effects I mentioned to you, for it is a mere consequence of simple physiological facts which no one endeavors to authenticate. Let us remain true to our purpose, however, examine the facts and remove all the extravagant ideas which have arisen. Let us prove without attempting to explain.

In the first place we must be in guard against fraud. It is the business of a clever and experienced man to avoid deception, and the few physicians who state that this is impossible only succeed in proclaiming the inferiority of their intelligence. If all the years of hard work they have passed through have not placed them in a position whence they are able to recognize the trickeries of mountebacks and hysterical girls, we are left to conclude that they have little profited by their education. I wish therefore, in the beginning, to make you fully comprehend that I shall only mention well attested facts, and that I shall wholly repudiate those which have not been universally witnessed, or which are so far removed from physiological truth that it has been deemed prudent to keep them still in reserve.

Somnambulism is a disease; it is a nervous affection, and one which we are able to combat, treat, and cure. It consists in the alteration of a physiological function, in a modification of sleep. We must therefore begin with sleep for it is necessary to understand the normal function before entering upon its modifications.

One of the greatest of nature's laws is that repose must succeed action. Our organs are not capable of performing their various functions indefinitely. Even the heart which apparently beats incessantly, rests a certain time between each pulsation, and instead of

reposing a long while, after continued activity like the rest of the body, it relaxes for a brief space after each period of motion.

The brain is no exception to the general rule, and requires rest after having worked all day. It then ceases to act, partially at least, leaving other nerve centres, the spinal cord for instance, to govern whatever remains active among the functions of the organism.

As to what becomes of the mind, during that time, I really am unable to say. It does not enter into my course of study, and moreover, if I intended to discuss important psychological questions, I should be continually reminded that in this very chair where I enjoy the perilous honor of speaking, Jouffroy and Cousin have already given you the full benefit of their learning. I should consider it a sort of profanation to bring before you, brief perceptions, a feeble echo, so to speak, of what has already gone before me, when it is so easy for you to have recourse to the admirable rules of these illustrious teachers.

Besides, I only desire to study the purely physiological character of sleep.

A certain portion of those who have occupied themselves with the subject, affirm that sleep is our normal condition. Our birth is an awakening, our death merely a return to our primitive state, while life is simply an episode where this eternal slumber is interrupted by a series of vigils and periods of activity. Buffon was less exclusive and stated that sleep was a form of existence as real and general as any other. "All organized beings which have no sensations exist in this manner," he said.

We will not linger, however, to contemplate these broad considerations. Let us rather return to our post of observation and see what happens when a man falls asleep.

The first manifestation of this state is relaxation of the muscles. The entire body becomes, as it were, annulled; the arms fall, causing the book they supported to drop; alas! sometimes, as most of us know, the head descends abruptly forward, which causes us to wake frequently, and produces anything but an agreeable sensation. After this, the senses gradually sleep. Apparently sight is the first to become abolished. The outside world disappears, and a dream begins. Frequently, particularly in children, an astonishing spectacle is presented. When awake we should call it a kaleidoscope, or an exhibition of fireworks represented by various brilliant hued flames of all shapes, passing before us rapidly, then suddenly fading away. Sleep is not far distant, but it is not fully established, for the sense of hearing is still awake.

This sense indeed, seems to be last to succumb. How many times, when on the point of dropping asleep, have we heard our name suddenly pronounced or a particularly interesting observation uttered; we arouse with a start exclaiming, "I was just going off, I was already in dreamland."

We might say that the sense of hearing by the very persistence of its activity contributes to the production of sleep. Does not a monotonous sound often induce the state? When amid the universal silence of Nature we hear the ceaseless lapping of waves along the sea coast, or a soft wind swaying among the trees, do we not become drowsy in listening? In infancy, an analogous mechanism, the singing of our mother or nurse, causes our senses to sleep rapidly while our ears are still sensible to the impression of sounds.

I could furnish you with innumerable examples. How many times has the monotonous discourse of a rambling and wearisome orator caused your eyelids to close involuntarily. The mind struggles at first and then abandons itself. The words succeed each other like the uniform ticking of a clock; the meaning is gradually lost upon the listener, and only when the speaker finally stops, does he awake with a start.

I have but little to say of the sleep of smell and taste. They seem to be quickly abolished and, apparently, do not even persist in dreams. A certain man who, although not a *savant*, was nevertheless a very minute and shrewd observer, Brillat-Savarin, calls our attention to the fact that it is excessively rare that we experience either the sense of smell or taste in sleep. When we dream of a beautiful garden or a field of flowers, we see the blossoms without inhaling the perfume. If we imagine ourselves to be present at a bountiful repast, we observe the dishes, and may even partake of them without tasting them.

Touch does not seem to be much behind sight in becoming abolished. But on the other hand, a slight impression in this respect is sufficient to drive sleep completely away. It is pretended, you know, that a rose leaf upon the bed was enough to prevent the Sybarites from sleeping. Recognizing the possible exaggeration, let us, however, recall some of our traveling experiences and think of the hard beds at the different hotels, which in spite of our intense fatigue kept us awake for so long.

While we become thus gradually deprived of our faculties, the organic functions continue to perform their work without ceasing; only, nothing is subject to our control, everything occurs automatically. This last word will reappear so frequently throughout this lecture that I will pause for a moment to explain to you the precise sense in which I employ it.

In ordinary life our will never sleeps. It regulates the exercise of our organs and presides over the accomplishment of all our acts. Some of these, however, are so habitual that we execute them, as we say, without thinking. Thus, for example, we expand the chest when we experience a desire to inhale the air. Sometimes we do this voluntarily, but more frequently the act is purely mechanical, and in the same way we execute a thousand different motions with the thorax in the course of an hour without being in the least aware that this is the case, without even knowing that the desire to

breathe makes itself apparent. This, of course, does not mean that the causes which produce the inclination do not exist. I simply intend to say that their effect does not reach our understanding. It stops *en route* and does not go as far as the brain. It is reflected upon the spinal cord, and gives rise to what is called *reflex action*.

In a normal state, the impressions which are made upon the surface of the body are conveyed directly to the brain; the latter immediately determines the order, so to speak, in which the organs react. Suppose for instance that you burn your finger. A sensation of pain is transmitted to the brain, and instantaneously your muscles are made to contract, and you draw back your arm. It very often happens, however, that the arm is drawn back before the brain has had time to comprehend the dangerous situation of the finger. This is owing to the fact that the sensation has already made a vivid impression upon the spinal cord *en route*, and this nervous centre causes the arm to be withdrawn although the mind as yet knows nothing of what has occurred. The sensation, therefore, is reflected upon the spinal cord as though the latter were a mirror, and this is what is meant by reflex action. You see how simple it is to understand. I could go on and multiply such examples *ad infinitum*. Sneezing, swallowing and the motions of the viscera are all reflex actions governed entirely by the spinal cord.

Do you wish for proof? A single experiment will give it to you. Here is a frog whose head you see I have just cut off. It has no longer a brain and consequently no sense of any kind. It can neither feel nor exercise any will power. I now place a drop of acid upon its foot and you see that the latter is violently withdrawn. It makes frantic efforts to remove the acid. This is all due to the spinal cord which produces a series of combined reflex actions.

You are thinking, perhaps, that we are still very far away from Somnambulism. On the contrary, we are in its immediate neighborhood, for I will show you presently, that the somnambulist is a being whose brain is temporarily abolished, and who, like the decapitated frog, acts in a purely mechanical way.

To be brief, the physiological characteristic of sleep is the comatose condition of all the senses combined with voluntary movements produced by reflex action. The latter we find in dreams.

When our senses fall asleep, they convey to our understanding a final impression, which results in the last idea that we receive, and *vis-a-vis* to which, our conceptive faculty, our intelligence, is, so to speak, completely free. It then happens that this idea produces a more vivid impression, and that with the rapidity of thought it can give rise to a long chain of imaginary ideas which develop and which our still conscious mind (the perception alone being annulled) accepts as real. This chain of ideas is a dream. If the chain is well made the dream will continue methodically; if defective, we have those

absurd and ridiculous dreams which sometimes, recalling the following day, cause us to smile.

In every case nothing can be more rapid than a dream. It has the precise duration required for a chain of ideas born solely of the imagination, and a dream that we often think has lasted all night, has in reality occupied the brain but a few moments. On how many occasions have you awakened several times successively after you have fallen asleep. In the few moments between each period you had a long dream, and were it not for the clock which informs you of the incontestable fact, you would swear you had been asleep for hours.

Thus, many physiologists and psychologists think that a dream is nothing more than the prolongation of ideas proceeding from a final impression produced in the mind by the senses at the moment when sleep overcomes them, or else the result of an impression formed upon the mind while it is yet awake, and the senses asleep.

The proof that this is the case is contained in the fact that in certain subjects it is possible to produce dreams and to regulate them at will. With some chlorotic young girls, for instance, the sounds produced in the arteries reach the ear and are conveyed to the brain during sleep—dreams result which are always the same. The young girl from the city will dream of a ball or concert; another, whose religious tendencies are more developed will imagine she heats the singing of angels and the hymns of saints, while a country girl will dream of wind stealing through the foliage, of rain pattering against the window panes, the gentle murmur of a brook, or the soft twittering of birds. The senses furnish the first idea, the imagination does the rest. I told you it was possible to regulate dreams at will. With certain persons subject to nightmare, a sudden exclamation, an unusual sound can change the whole course of a dream, waken a portion of the brain, and cause the sleeper to reply to a question put to him, which proves that his dream has conformed itself to the suggestions of whoever speaks.

This, gentlemen, is the normal state. Exaggerate it, and you are in the presence of that nervous malady called Somnambulism.

Sleep, abolishing perception, but not conception; a dream that another person may modify according to suggestion; automatic action consequent upon the lethargy of a portion of the brain and the predominance of the spinal cord. This is the conception of that famous affection which appears to be so incomprehensible, when we do not take the trouble to analyze it, or else when we investigate it superficially.

You see I did not deceive you when I said it would be necessary to study sleep in order that we might comprehend the maladies arising from it.

Now, what is sleep physiologically dependent upon?

If we remove the top of a dog's skull while the animal sleeps, thus exposing the surface of the brain, we see that during this state it presents a whitish appearance, while it becomes pink as soon as the clog awakes. It has also been observed that the brain assumed this rosy hue when the dog executed a series of automatic movements, which led to the belief that he was dreaming. Sleep was therefore the result of a sudden anæmia of the brain, and a man or an animal can be put to sleep by simply pressing upon the carotid arteries in the neck; that is to say, by preventing any blood from going to his brain. These things, however, are rather problematic, and I prefer to leave them in the background, that I may give my full attention to the *diseases of sleep*.

The first important modification is the excess of sleep, what we call stupor or lethargy. These terms, I am sure, will produce very different impressions among you. Some of you will recall those terrible stories which have been told us independent of proof, in which it is said that people affected in this way have been buried alive. Others will remember the fairy tale called "The Sleeping Beauty," in which a lovely lady sleeps in an enchanted palace awaiting the arrival of Prince Charming. It is probable, however, gentlemen, that all these stories are false, although science can confirm the possibility of similar fables.

You will doubtless be intensely astonished when I tell you that the Sleeping Beauty may have actually existed. What will you say when I tell you she is alive now and in Paris! It is nevertheless true, that in one of our hospitals, of which I shall frequently speak, La Salpêtrière, there is a woman forty-five years of age, who, to my certain knowledge, has slept for more than a year without waking. By giving you her history I will make you familiar with the principal characteristics of stupor. This woman entered the hospital in consequence of paralysis of the lower limbs. For twenty years she has been unable to move from her bed, and in that time has grown excessively stout. Her intelligence is of the most mediocre order, but her general health has always been good and her disposition exceedingly quiet. A few days prior to her strange attacks, she becomes suddenly very agitated, speaking continually with the utmost volubility and bursting into such violent fits of laughter that everyone about her involuntarily joins in the hilarity. All know the meaning of this behaviour, and the superintendent informs the physicians that the *sleeper* will soon become insensible. Her laugh gradually ceases, her eyes close, her arms fall lifeless, and in this condition she remains sometimes for a week, sometimes for a year. During this time she is nourished with a stomach pump, and no exterior excitation whatever can rouse her. From time to time she sighs heavily, and then relapses again into stupor.

The photograph that I have here will show you how closely this state resembles death externally. It shows you also just how this woman remains for months at a time pale, motionless, and in no way manifesting any sign of life, although she is far removed from death.

This is the lethargic type which after all is merely a long, profound sleep, probably filled with dreams.

Finally, the woman awakes, and is surprised to find snow and ice outside instead of the green leaves and brilliant blossoms of spring.

The second state, resulting from a modification of sleep, is Somnambulism.

This celebrated malady, gentlemen, must be divided into two parts. First we have natural Somnambulism, which arises spontaneously and develops independently, and secondly, induced or artificial Somnambulism, which results in those machinations improperly termed magnetic. This distinction, I think, is well founded, for even if the effects of the two affections are similar, their nature is quite different. You will understand this when I have made you familiar with both.

A considerable number of physicians call spontaneous Somnambulism *Automatism*, and this word seems to me infinitely preferable to the ordinary term. It admits of no confusion, to begin with, and it expresses a clear idea of the nature of the disease.

There are several degrees of Somnambulism. The most simple is a sort of intellectual sleep, the senses and organs being awake, or partially so. You recollect that in natural sleep we saw the intelligence persist, although all the muscular masses had already succumbed. Here we have the contrary in the sleep of the intelligence while the organs possess the appearance and activity of waking moments.

You know that during long night watches many women have fallen fast asleep and continued to knit or spin assiduously. All their movements were perfectly normal, but if spoken to they did not reply, for they slept. I know a little girl twelve years of age who has frequently presented the following singular fact to my notice. While walking with her father and mother along a flat, uninteresting road, during the summer evenings, it always happened that she suddenly experienced a sensation of utter fatigue, and would cease to take part in the conversation. When addressed she made no answer, for she slept as she walked. Her steps continued to regulate themselves with the others, and only when shaken lightly did she awake.

I recollect having often been told by mountain guides that in making night ascensions it is necessary to ply the whip every moment to the horses to prevent their falling asleep. One of the directors of an omnibus line in Paris said to me the other day, that the horses in the evening constantly slept while walking or trotting.

This is really Somnambulism, for the term signifies walking while asleep. Natural Somnambulism, however, is quite different, and instead of defining it accurately I will give you a certain number of incidents in which you will find it represented in all its phases.

At the time when I was employed at the *Hôpital Saint Antoine* I was fortunate enough to witness, together with Dr. Mesuet, M. Maury, and several other eminent men, one of the most curious cases of automatism that has ever been recorded.

The person was a Zouave who had received at Bazeilles, a terrible wound on his head, which left his brain partly exposed. This unfortunate man at the time of the accident fell paralyzed to the ground in a state of insensibility. But he was picked up by the enemy, carefully nursed by them, and in due course of time recovered his senses. His paralysis even disappeared, so that by the end of two years he was able to resume his ordinary manner of living. Being a man of considerable talent and some little education, he adopted the profession of singing in the different *cafés concerts*. Just about this time he began to be affected by the singular malady, which I am going to describe to you. On certain days he would become suddenly very depressed, then as though anxious to rid himself of the melancholy, would rise, dress and walk for hours in the streets. He advanced in a straight line, looking neither to the right nor to the left, as though observing nothing about him, and indeed he could not have seen, for he ran into various persons and objects unless his hands, which he sometimes extended before him warned him to be more careful.

He was then, as physicians now say, in the *second state*, the first condition being the normal one. Nothing in his appearance denoted Somnambulism as far as the public was concerned, except one important peculiarity. The unfortunate man was seized while in this state with a passion for stealing, which apparently nothing could overcome. Every shining object; whether valuable or absolutely worthless became the subject of his covetousness. He would take it quietly from a stall or shop window, and put it with no sign of fear or hesitation into his pocket. He also seemed to care very little whether the proprietor of the shop saw him or not, and the presence of a policeman made no difference whatever. You can readily imagine, gentlemen, that such a manner of proceding could not continue long in Paris without attracting considerable attention, and it was not long before this unhappy creature was arrested. The physician of the prison to which he was consigned, however, saw that the man was the victim of disease, and had him sent immediately to M. Mesuet, who thoroughly investigated his case with the assistance of his colleagues and students.

At the hospital, the patient entered the *second state* about once a month. The attack always began in the same way, by his rising and beginning to walk. Being perfectly strange to his surroundings, he always extended his hands before him, picking up every brilliant object, watches, spoons, tumblers, etc., and placing them in the large pockets of his hospital coat. We took these things away from him without any opposition being evinced on his part. He never spoke, saw nothing, heard nothing. A ray of sunlight falling directly across his eyes did not produce the slightest effect upon them. A deafening noise made close to his ear did not cause him to swerve or tremble. His skin,

even, had lost all trace of sensibility. Long steel needles were run into his flesh and the skin cauterized, without producing the slightest movement on the part of the patient.

This, gentlemen, is real Somnambulism. The mind sleeps, perception and conception are both abolished, the senses are partially annulled. Organic life exists, but the person is like the frog I showed you after I had removed its brain, that is to say, its intelligence only; as M. Charles Richet says, the brain is merely asleep. It is possible to waken it completely, it is also possible to rouse it partially, or to animate a single idea which will become the origin of a dream, just as the last idea presented to us before we sleep naturally can produce a dream which lasts all night. But the dream of a Somnambulist has particular characteristics, in as much as a certain number of functions, movement among others, are still awake.

While our man was in the second state, a large cane was placed in his hand. He felt it carefully, and his face lighted up with animation. Shouldering the cane which he evidently mistook for a gun he began to walk majestically up and down. You see an idea had been roused into activity, and this idea produced others of an associating character. The dream once begun, memory intervened and we then witnessed a most curious scene. This *cidevant* Zouave began to walk cautiously all at once; then he stopped as if listening, walked a few steps further, listened again, then suddenly drew violently back and hid himself behind a bed. He next shouldered the cane, made a motion as though cocking a gun, seized an imaginary cartridge, went through the formula of loading and took deliberate aim at this point, his eyes glared with a fierce light and he shouted with a loud voice "Here they come, here they come! There are at least a hundred of them!" Then, he fell suddenly back upon the floor, his hand pressed tightly to his forehead. He remained as if dead; the dream was over.

On another occasion we endeavored to provoke a different dream by *suggestion*. Being a professional singer we desired to make him think he was upon the stage. A roll of white paper was handed him, at which he looked long and seriously. Simultaneously, a lighted lamp was placed beneath his eyes with the hope that it would suggest the idea of foot-lights to him. The success was complete. The patient began to try his voice, but at the same time gave evidences of being ill at ease. He finally removed his hospital coat which was replaced by a frock coat handed to him by one of the physicians. He seized it hastily, but stopped short on seeing a small spot of bright scarlet. This was a decoration of the Legion of Honor which was attached to the buttonhole. This he carefully detached and placed in his pocket. He then dressed himself in the coat, coughed once or twice and began to sing patriotic airs of which he made a specialty.

Another time, he was given paper and ink and he began to write a letter to his old General asking some trifling favor. When he had finished, the letter was hastily

removed from before his eyes, leaving nothing on the table but a blank sheet which had been underneath. He began to read over his letter, holding the blank sheet in his hand, stopping from time to time to jot down a comma or period, and finally signing his name at the bottom of the page.

The patient woke naturally, utterly astonished at finding himself in bed in broad daylight, surrounded by several people, and having no recollection of anything that had taken place.

Gentlemen, this is a typical instance of Somnambulism. You have first of all, sleeping of the brain, then an awakening either by the action of the memory, or by an exterior suggestion of a single idea which forms others. This is the characteristic of that strange condition which M. Mesuet has appropriately termed the automatism of memory.

At the close of his remarks, M. Mesuet said that automatism would undoubtedly very soon be admitted into medico-legal cases. The idea which awakens in the automaton can be anything at all. With our Zouave, it was one of battle, but also frequently one of theft, I will show you others who dream of suicide, assassination, incendiary, etc., and who accomplish these crimes without having the slightest recollection afterwards of what they have done. "I do not despair," said M. Mesuet long ago, "of gaining the conviction of magistrates and causing these men to be acquitted."

This hope, gentlemen, has been realized. Three weeks ago one of these unfortunate creatures was arrested, imprisoned, tried and condemned, before he had, so to speak, come to himself. When he finally awoke, it was to find himself lost, dishonored and imprisoned. He was even ignorant of the crime which he had committed.

He then called to mind that physicians had often mentioned the strange conditions into which he sometimes passed, and he summoned M. Mesner and M. Moteb. These *savants*, while before the Court of Appeals, succeeded in putting him into the second state, convincing the lawyers thoroughly and causing the arrest of the first judges.

I have shown you an automatic robber. Here, now, is an assassin. One of the monks belonging to a convent in the south of France, cherished a hatred, perhaps justifiably, against his Superior. One night he rose while sleeping, took a poinard which he had in his cell and crossing the cloister entered the Prior's room. The latter, instead of retiring at his usual hour, had seated himself to write at a table on which were two lamps. The monk passed before him without perceiving the light, walked stealthily to the bed and struck several blows with his poniard upon the pillow. He then stole out of the room, regained his cell and went to bed again. The next day when questioned by the Chapter of the convent, he could recollect nothing. This man although unconscious, would have been condemned unhesitatingly as an assassin.

A lady whom M. Mesner had long occasion to observe presented one of the most extraordinary cases of natural Somnambulism ever known.

With her, a sad and melancholy idea always was the starting point of her dream. She would rise from her bed in the night and endeavor to throw herself out of the window. She never saw the persons who surrounded her or paid any attention to them in any way. On the following day, all was a blank to her.

One night, she carefully steeped some *sous* in a glass of water, then seating herself at a table began to write to her family; "I wish to die," she wrote, "I shall never recover my health, my head is out of order. Farewell, by the time you receive this letter I shall have but little time to live. By to-morrow I shall have taken the fatal poison which this glass contains. Once more, farewell."

This done, she concealed the glass in a closet, as the poison, she thought, was not yet strong enough. Just as she accomplished this act, she was seized with a hysterical attack and awoke. On the following day she remembered nothing of what had occurred, and asked for her glass, which she said, some one had taken. Another was given her in its place. The next night, she rose from her bed while asleep, walked straight to the closet, opened it, and seized the glass of poison. During the day it had been replaced by a tumbler of pure water by a member of the family. As she removed the glass from the closet, the entire household, summoned by the lady's maid entered the room. Mme., however, did not perceive any of them. She was sleeping, dreaming. She threw herself on her knees before a crucifix and placed the glass to her lips. At this moment, as though seized with a sudden resolution, she put it aside, rose, and wrote the following letter to her family:

"Just as I was on the point of swallowing the deadly poison, an angel appeared to me just as he did to Abraham when the latter was about to sacrifice his son. He caught me by the arm, saying; "Think what you are about to do; you have a husband and children." When I heard these words my heart beat quickly and I felt overcome with conjugal and maternal love. Still, I am very ill, and my head is weak. Pardon me this fault, so great in your eyes and in mine."

This she wrote, still sleeping.

Mme. X. did many other things on various occasions just as curious, and the most wonderful thing of all was that while in her normal condition during the day, she remembered nothing she had done while asleep. She always continued any dream she may have had in previous nights, and completed it.

This leads me, gentlemen, to speak of a singular state constituted by Somnambulism. This is called *double consciousness*. The first physician to give a good description of this nervous affection was M. Azam, professor of the medical faculty at Bordeaux.

The person observed by M. Azam was named Félida X, a seamstress living in Bordeaux, whose health was moderately good, if we except the periodical attacks she was subject to.

On certain days, in the midst of her work, she would suddenly become dull and melancholy. Her head would drop upon her breast and she would sleep so soundly that it was impossible to rouse her. Finally Félida would wake in the best of spirits. Her manner was lively and she would run about in the most exalted of moods. Several hours later, all this left her. Félida relapsed once more into gloom and silence, and gradually fell again into a sound sleep. When she awoke from this sleep she remembered absolutely nothing that had taken place during the second stale. The next time, however, that she relapsed into this condition she recollected all that occurred on a former occasion, but could recall nothing pertaining to her normal state. She was unable to recognize persons that she had then seen. Félida consequently has two personalities—two lives—in one she is sad and gloomy, in the other gay and cheerful. While in the first state she can recollect nothing of the *second state*, and while in the latter condition she continues her existence, so to speak, from the point she stopped at during the previous attack. This state of double consciousness, as it is termed, seems really to be merely a species of natural Somnambulism. Modern science appears to be considerably advanced upon all these points. But you will ask, gentlemen, what antiquity thought of these phenomena, and how they were received and understood throughout the middle ages and even later times. Ancient history gives us but little information on the subject, but in my next lecture I will endeavor to tell you what was known on the subject, in spite of the imprudence I shall thereby commit by attempting retrospective science from such a distance.

Paul-Marie-Léon Regnard (1850-1927) was a French physician, physiologist, and photographer who studied atmospheric pressure's effects on microbial metabolism. He received his medical doctorate in 1878 and was director of the Institut National Agronomique. Regnard's photographs of the mentally ill were published in his book *Iconographie photographique de la Salpêtrière. Service de M. Charcot*.

SLEEP AND ITS DISORDERS

Tom R. Taylor

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Sleep may be regarded as the anabolic or reconstructive phase in cerebral activity. Many of its phenomena have their analogues in the physiological fatigue of other tissues. But, on the other hand, psychical forces having so great an influence upon the more purely somatic side of life, and being equally dependent upon bodily states, it follows that the analogy cannot be pressed too far. During sleep the mental faculties of knowing, willing, and feeling are in abeyance *pro tempore*. Those regions of the brain, however, merely concerned in trophic and the other purely organic functions continue in a state of activity somewhat below the waking degree.

With regard to the senses, they may be said to sleep in different degrees of soundness, taste and smell being heavy sleepers, whilst tactile sense and hearing act like watch-dogs to the slumbering brain. Digestion and assimilation, together with the metabolic processes, all sink to a low ebb. But there are degrees of sleep. There is the sound healthy sleep, waking from which all is blank. There are dreams of varying degrees of vividness and coherency, of which a distinct recollection remains, with impressions as keen and realistic at the time as those of objective life. There is the sleep with an indistinct feeling on waking of having had some experience too vague and intangible to describe, or which may be "broken" later on in the day. And there is that delicious but pernicious state called dozing. In this condition there is some knowledge and feeling, but the highest functions of will are, as we feel it, allowed for a while to lapse, whilst we mentally drift along, party forming ideas, partly experiencing hallucinations which we know at the time to be merely dreams.

The late Mr. Arthur Durham, from his direct experiments upon the brain, found that during sleep there was a diminished blood supply. This he attributed to the wearied brain not inhibiting the ever active vaso-motor centre. It has been suggested, and with reason, that sleep, like the fatigue of muscle, is due not only to the using up of the potential energy, but also to the accumulation of the waste products of nervous activity. Consciousness is the sum total of peripheral stimuli. Imagine all such removed, and it is

difficult—in fact, impossible—to realise existence. If no stimuli are received, or if the centres be too depressed to appreciate, then there is no consciousness. All know the greater tendency to sleep when external stimuli are, as far as possible, shut out. Strumpell records an extreme example of this. A boy who had all the sensory inlets paralysed but one eye and one ear, fell asleep when these, his only communications with the objective world, were closed.

The disorders of sleep are numerous. The first and most important one from its frequency, and from the fact that the physician is so often consulted upon the matter, is insomnia. This amounts almost to a disease and causes extreme suffering. It may be subdivided into what may be called, for want of a better title, true insomnia and symptomatic insomnia. Symptomatic insomnia is well known in the sleeplessness occuring in febrile states, in uræmic conditions, and more especially in nervous and mental diseases. It is a prominent symptom and general forerunner in almost all forms of mental aberration. In delirium tremens, for example, the sleeplessness of the patient is most striking. But perhaps the most remarkable cases occur in those states of mental alienation where the patient, hour after hour, with monotonous regularity, repeats some act or phrase, apparently tireless as an automaton.

The treatment of symptomatic insomnia must, if possible, be directed to the “fons et origo mali” ["the source and origin of evil”]. Febrile insomnia passes away when the temperature is abated either naturally or artificially. Sponging the surface of the body of such a patient with tepid water will often secure a good night’s rest. Antipyretic drugs often have the same effect. In some cases the administration of a little alcohol will act in a most beneficial manner. The use of hypnotics may be necessary in any form of this trouble, but it is more especially in the nervous and mental cases that their use is indicated. Here very large doses may be given, and too often with but little result. Grain-doses of morphia hypodermically, sixty to ninety grains of chloral, &c., are often administered with impunity. In a case of my own, where acute mania with delusions followed the removal of a cystic kidney in a highly neurotic woman, two-thirds of a grain of morphia hypodermically only induced one hour’s sleep. The stronger hypnotics, such as hyoscine, should be reserved for these cases. Hydriodate of hyoscine is, perhaps, the most powerful sleep-producing agent. A dose of one seventy-fifth of a grain placed under the tongue in one case induced profound sleep for eighteen hours. It was impossible to wake the patient, who, up to the time of administration, had been noisy and restless. He was suffering from sub-acute mania with delusions and had also epitheliomatous cervical glands. Of milder drugs, sulphonal and chloralamide are safe and valuable agents. A combination of chloral and bromide of potassium may be given as a draught, but should never be persisted in for any length of time.

With regard to what I have styled true insomnia, let us take first of all that of children. Restless, sleepless nights, apart from any definite disorders, are commoner

among young children than might at first be supposed. The sufferers, as a rule, are neurotic, precocious youngsters of an imaginative turn of mind. And let us bear this in mind: children know more, think more, and are not nearly so simple-minded as many of us think. A trip to a pantomime, a children's party, or any form of childish dissipation may set one of these highly-strung minds at work. Every incident of the event firmly impressed on the susceptible cortex in all its details is recalled vividly when the association processes are initiated, as they may be by the slightest thing. When the child retires to bed every melody, every song is heard over again, every face is seen, every feeling experienced, and sleep is impossible for hours, until the wearied brain yields, choked, as it were, with its own waste products. In the morning the little one is weary, languid, and peevish. Such cases are not uncommon, but are rarely brought for advice. We would not, if we could, change the temperament, for such children enjoy as they suffer—keenly. But we can adapt life to such, for their life's surroundings are in our hands. No imaginative, eager child should be encouraged to think. The mental side should not be forced. In fact, we may neglect it in our case, for it will develop only too rapidly. Encourage the physical, the purely animal side of life—the love of nature and open air exercise. Let all evening meals be light, and at least two hours before bed-time; and despite protestations and tears, if a *fête* be necessary or desirable, let it be an early one. The insomnia of adult life, like that life itself, is more complicated. There is a form we often see. It occurs in what I may call the superior person. He has some amount of education, and has vast pride in the possession. His occupation is almost reflex, yet nervously exhausting, say a compositor or a clerk. His relaxations are attempts at acquiring knowledge, futile attempts at learning a language by means of Professor X.'s five minutes' method, or a science whose rudiments are skipped, and the great questions of life or the creation are discussed as though they were absolutely puerile by the side of the multiplication table. His mode of life is ascetic. He is a teetotaler and a non-smoker. In fact, all those frivolities which make life what it is—livable to a rational man—are taboo. He cannot sleep at night; hour after hour he tosses about, thinking out great schemes, as he deems them, for the regeneration of mankind, until this sleepless time becomes a habit, and he seeks advice. The sooner such a man realises that he is neither a budding Müller nor a coming Newton, the better for him. He should take to heart Dr. Pascal's motto:—

Connais la vie, aime la, vis la comme elle doit être vécue. ["Know life, love it, live it as it should be lived.]

The whole of such a one's mode of life should be gone over in detail and corrected. Healthy relaxation for both mind and body must be provided for; and at first some mild hypnotic may be given an hour before bedtime. Care must be taken, however, if possible, not to let the patient know that he is taking anything of this nature, or at any

rate, the particular drug selected. For these men are, as a rule, essentially neurotic, and readily acquire habits.

Then there is the form of insomnia due to overtaxing of the brain, which, like a sorely-tried muscle, quivers as it were when the effort is over—hard-reading men who work till the small hours of the morning, and then immediately go to bed. They should devote at least an hour before retiring for the night to resting their minds by reading some literature of a most unexciting nature, and quite foreign to that which they have been perusing. Or they may play cards, or chat, or have a stroll; in fact, anything to divert their thoughts for some time. Those much concerned with figures, e.g. contractors, are often very much troubled by sleeplessness, and this must likewise be attributed to an overgoaded cortex. Chloralamide in a glass of whisky and water before going to bed is a most excellent hypnotic, and should always be given when, as in the case of a harassed business man, a good night's rest has not been obtained for some time and the stress is only likely to be temporary. But if it be found that the strain is constant, then the drug must not be persevered with. The patient must be advised, if he values health and life, to change his pursuit, or, at any rate, find means to lighten the burden of it.

In elderly people, in addition to the preceding forms, there is one we are often consulted about, viz., sleeplessness for some time after going to bed and wakefulness after some early hour in the morning. It must be remembered, however, that afternoon naps are a common luxury amongst those who have borne the heat and burden of the day; and that the twilight of life brings with it diminished activity, and hence less fatigue and necessity for rest. One cannot leave the subject of insomnia and its treatment without alluding to that infant, as yet, in therapeutics—hypnotic suggestion. Much can be done in the way of suggestion without actually hypnotizing the patient. The following case occurred in the practice of a friend. A lady, a victim to insomnia and its too frequent sequela, the morphia habit, came for advice. She was directed to take every night a small pill, after doing which she was assured she would fall asleep in twenty minutes. The pill was an ordinary dinner pill, but so strongly impressed was she, that the desired result was obtained. She had a good night's rest. Gradually the pills were omitted, and the morphia habit and insomnia were cured. The method of suggestion as practised by the Nancy School has produced most brilliant results in some extremely obstinate cases. At present there are obvious difficulties in its general application. But when a little more of what is now generally regarded as either charlatanism or clever conjuring is known, I have not the slightest doubt that hypnotism will take premier place, not only in the treatment of insomnia but of all neuroses—more especially those of functional origin.

Prolonged Sleep.—Apart from the conditions of trance or catalepsy and the artificially-induced sleep of hypnotism, we hear but little of excessive sleep. More or less demented individuals, however, pass long periods in a state of stuporose slumber.

The heaviness and sleepiness complained of by the majority of those who consult us are almost invariably the result of a too great love for "the flesh pots of Egypt." In nine cases out of ten it means chronic dyspepsia and constipation. An uncongenial occupation or excessive work will account for nearly all the rest.

On the west coast of Africa there is a curious endemic disease known as "the sleeping sickness." The patient becomes gradually more and more somnolent, and finally passes into a state of coma, and, as a rule, dies. It must be remembered in connection with excessive sleepiness, that it often occurs in cases of grave toxemia, and Friedreich and Obernier record two cases of cerebral tumour where it was the chief symptom.

Dreams.—Locke says: "The mind can frame unto itself no one new simple idea." It requires a wide education, a retentive memory, and a brilliant imagination for a man to realise dreams such as those of De Quincey. Not everyone who drugs himself with laudanum experiences the intellectual heaven described by "the opium eater." Dreams are but the resuscitation of apparently dead memories. Impressions never entirely fade from the mind. The hemispheres act as it were as store-houses. But experiences do not remain for ever, or even long in their original condition, and the memory called up by some associated idea is often unrecognisable. In sound sleep there are no dreams, and it appears from the scanty scientific knowledge we have of them that they occur either at the time when we are falling asleep or waking—a condition of partial sleep. The higher functions of judgment, comparison, and will are obliterated, and with them the power of perception of time and space. The senses are active to a certain extent, and it is through them that the initial process in a dream is started. Habitual, recent, and any extremely interesting impressions are then recalled.

They may be vivid and detailed, and the experience bear all the appearance of the past event being re-enacted; or the incidents, details, and mere mental feelings of several memories may be blended into an apparently new creation. On the other hand, no concrete conception may be formed, and the whole is but a confused medley of disjointed ideas. The term micro-psychical may be applied to these. A dream may occur time after time with exactly the same feelings attached to it. Many students have a special dream before every examination, and similarly with those in other walks of life.

I am acquainted with a man who became quite dejected as to the results of an enterprise if he did not have a certain peculiar dream. From time immemorial visions have been viewed with superstitious awe, and even at the present time we tell our dreams, and often find a quasi-prophet who interprets. Living, as it were, another life,

where events apparently new take place, where the whole interest of the drama centres upon what in waking life would he perhaps ignored, it naturally follows that a mystic importance is attached to the idea upon which the dream is founded. An explanation once wanted can always be found, and in this particular case the supply exceeds the demand. It is amusing and interesting to note the varying interpretations given by different authorities. If a rhyming couplet be the form of the oracular opinion, then so much the more does the dictum carry weight. For example, take the case of dreaming of fruit—

"Fruit out of season,

Pain without reason."

This opinion is objected to by another prophet, who says, to dream of fruit portends success and happiness. The former, however, is the one most relied upon, and in the present order of things, the most generally true.

In dreams, perhaps, we most distinctly realise the fact that pleasure and pain are feelings absolutely distinct from the objects or sensations which evoke them. We may be absurdly happy or suicidally miserable over exactly the same idea. A very remarkable fact is the effect of a miserable dream upon the spirits for some time, even days, after it has passed away, even upon the least superstitious of mortals. Nightmare or night terrors are an absolute affliction to many people, and children suffer as much or more than adults. They are often of a recurrent type, the same horror occurring over and over again.

A friend relates how as a young child he was haunted in his sleep night after night by a dream of a corpse. He saw the vision with agonising terror. The horror moved to clutch him, and he awoke with a shriek. He had at that time never seen a dead body. At first sight it seems difficult to realize the processes at work. But we must note that the idea of death was supplied gratuitously, for the hallucination was a moving one. All or most young children have heard of death, and unconsciously, in fact, naturally, acquire a horror of all connected with it. Add to an ordinary man the idea of death, absolute dread, and a sense stimulus as causative agent, and we have all the ingredients required for this apparent contradiction to the statement that dreams are old ideas resuscitated.

All researches upon the subject tend to show that the most detailed and wonderfully intricate dramas are played in dreamland in perhaps a few seconds. The story related of Mohammed, who in the time it took for a basin to fall from a table to the ground dreamed a whole life's history, is only a slight exaggeration.

Somnambulism, often a most troublesome and dangerous habit, is closely allied to the above condition. It takes many forms, but in all cases must be regarded as a variety of partial sleep. The commonest form is that in which the victim actually acts his part in a dream and has some recollection afterwards. Once when working hard at

mathematics and much troubled about a certain problem, I started out of bed in such a condition, and actually commenced wandering about the house "to find the solution." It is a remarkable fact that somnambulists are almost invariably attracted to a window or an open door. This must certainly be accounted for on the supposition that there is some perception of light. This peculiarity has ended in a tragic manner in many cases, and countless stories tell of hairbreadth escapes and feats performed impossible to the waking individual. Somnambulistic performances during a more profound degree of mental sleep, where no memory remains, are closely akin to the phenomena of hypnotism, and must also be ascribed to obsession or the predominance of a certain fixed idea. In my own case mentioned above there was a certain idea that something must be found, and forthwith when the higher centres were asleep the suggestion was paramount.

Somniloquy, or sleep-talking, may occur either together with the last condition or as a phenomenon unassociated with any other motor manifestations. A coherent conversation may be carried on with another real or imaginary person, or the remarks may be limited to disjointed sentences or even single words. Nearly everyone talks, or has talked, during sleep, but few either see or hear of a case such as that recorded by Dr. Bastian in Quain's "Dictionary of Medicine." A young lady sang during sleep in a manner impossible for her to do when awake. One is involuntarily compelled to think of the hypnotised Trilby. One of the boys in the same dormitory as myself at school once aroused the rest by raising an alarm of fire. We were on the alert on once. He answered quite coherently, and described the advancing fire, shrieking with terror. He was quite oblivious to his real surroundings until rudely brought back to the workaday world by a missile burled by a fierce and sleepy neighbour.

In both somnambulism and somniloquy, parts only of the brain seem to be asleep, and those allotted to certain functions appear not only to be awake, but more than usually receptive of certain stimuli. The condition is closely akin to the condition known to hypnotists as the agitated variety of the somnambulistic stage. And as in this latter state the subject sees and hears only what is suggested, so, in the natural form, only those impressions are perceived which are consistent with the dream.

Treatment.—With regard to the treatment of these forms of partial sleep, what are we to say?

Some authorities go so far as to say that no sleep is absolutely dreamless, but that after apparently sound sleep no memory remains. There is no doubt that many of the most awful forms of nightmare, with the resulting exhaustion and mental depression, are purely bodily in origin, and may be accounted for by late or heavy suppers. On the other hand, there is generally some neurotic taint in those who indulge in somnambulism and somniloquy. These are by far the most difficult cases to manage.

The traditional treatment of a "sousing" in cold water is, at any rate, not to be employed for sleep-walkers.

Our lines of treatment must be, as far as possible, purely hygienic diet, exercise, and fresh air, in order to make sleep as sound as possible. In the more complicated cases it may be necessary to give sedatives, and then the surest, and by far the best, remedy is a combination of bromides with ammonia. The mental side of the patient must not be neglected, and as healthy a tone as possible must be cultivated and encouraged. Anxiety, worry, and over-work must be reduced to a minimum, and any fixed idea or trouble as far as possible alleviated by a change of scene and surroundings.

Tom R. Taylor, M.D., B.S., B.Sc.Lond., F.R.C.S.Eng. was a prominent London-based physician.

A NEW METHOD OF INVITING SLEEP

J.B. Learned

The Southern Medical Record. Oct. 1897. Vol. 27, No. 10. Pages 509-511. Reprinted from Journal of the American Medical Association.

A violent collision with the frozen earth, the result of my first drive with a newly purchased horse in 1880, took me out of the busy life of the every day and night practitioners. For many years, instead of experimenting upon a willing and paying class of the laity, I was experimenting upon an unwilling and non-paying member of the profession. I did not sample all the remedies of the "Dispensatory," but I sampled many remedies outside the "Dispensatory." Hot water, cold water, inside and out; lack of food and surplus of food; gymnastics in my room and gymnastics with the wood saw in the basement in the night time, brisk walking in the halls and around the square before retiring, friction direct and indirect, long deep inspirations with and without the numberless mental occupations, as varied as the physical; all these I tried faithfully. I also read about insomnia, its causes and remedies. It was during this blank interval, while I waited for power to return to me, that I raised the inquiry: Can we devise any means to turn off the belts from this little fragment of brain that insists on its automatic excursions day and night—this perpetual motion of a few cells of gray matter, that obstructs rest and prevents repair of the great whole? Can we by counteraction set up a motion elsewhere after retiring, that will bring an equilibrium of arterial and vital current so that sleep will come to our relief?

During this frame of mind, I experimented and practiced with muscle and will in many and divers ways after retiring. I had the whole bed, length and breadth. I directed various contractions and relaxations, and finally reached the conclusion that a systematized and well-ordered method of muscular and mental activity would soon bring the conditions required—a sense of fatigue that precedes and invites sleep. A recumbent position furnished the best opportunity. Once asleep the point is gained. Who has not been dull and almost asleep before retiring, but wide awake immediately after disrobing and experiencing the gentle shock of the fresh sheets and changed posture?

Is it necessary to recite here the advantages of proper conditions of atmosphere and temperature of the sleeping-room? I will assume not, but will say that open windows at all seasons, heat never turned on in my sleeping-room and moderate bed-covering has come to be a necessity with me. This is my method:

Lying upon my back, with or without pillow, I reach for the foot-board and head-board at the same time. This brings into use many muscles that have not been on active duty during the day. I now raise the head half an inch, enough to realize that it has more weight than I first supposed. At the same time, by will power, I direct the respiratory process to a slower and deeper movement. I order about eight inspirations deep and full, in place of sixteen per minute. Every inspiration is recorded, counted. Thus the process begins of inviting the forces into new channels and relieving the old. At the expiration of ten to twenty inspirations the head has become so heavy you want to drop it. This you do. Immediately the right foot is raised a half inch from its resting place. The reach for the foot-board and head-board continues; the count of slow, deep inspirations continues; the sense of fatigue of muscles engaged in lifting the foot and holding up the coverings continues. Here, as before, the foot, like the head, has become a dead weight and must go down. Now, immediately the left foot is elevated with all the previous conditions remaining. The reach downward and upward of foot and head is kept up, so far as power will permit without exhaustion. This foot remains up for the same length of time, the respirations being the clock work. It goes down. You may now relieve the reach for foot and head boards and use the muscles to elevate the trunk, holding it by resting upon heels and head and shoulders. This elevation of the central part of the body and rest upon the two extremes will call for change, as all the former positions have done. By the same clock you have the time marked off and the body is again flat upon the back waiting new orders. Turn now to the right side, reaching for the head and foot boards as before, and elevate the head half an inch by use of the lateral muscles of the neck and chest. At the expiration of the time the head goes down and the foot goes up by use of the lateral muscles. Change now to the left side, and repeat what has just been accomplished by the muscles of the opposite side. You have now assumed eight positions and used a large majority of the whole number of muscles in carrying out your dictations. If you have not fallen asleep before this cycle is completed you may begin again and go over the same round. If you have already gone to sleep you will not be required to.

Other methods of procedures would answer the same purpose, undoubtedly, with the respirations guarded and uniformity observed, mind and muscle constantly occupied. There should be no periods of rest, no vacations. Thus fatigue comes inevitably and sleep follows. I know of no means so ready, so much at command, any time and any where, so inexpensive and so absolutely certain to induce sleep as this routine of mental and muscular exercise. It involves a principle. Following it, sleep appears to be inevitable. There is but one drawback; it requires some exertion, continuous mental and muscular exertion. The indolent will find it unattractive.

Some conditions of heart or nerve center may altogether contra-indicate this method. The length of time employed in the several positions will vary according to the make-

up of the individual. No one rule can apply to the robust and the exhausted as to the time spent in a given exercise, only that which measures the power of endurance. It is the sense of general weariness following persistent effort that brings the desired result.

Dr. John Barr Learned (1839-1910), was a physician in Northampton, Massachusetts. He was a promoter of "drugless sleep" and in 1900 offered a prize of $100 for "an essay which shall describe any method of extemporizing sleep immediately on retiring for the brain-working classes."

NOTES ON SLEEP

Why He Cannot Sleep, by Thomas Nast, 1866. National Gallery of Art

DIRECTIONS FOR THE MANAGEMENT OF SLEEP

The Dublin Penny Journal. Nov. 30, 1833. Vol. 2, No. 74. Page 171.

As nothing can contribute more to the healthy exercise of the faculties of mind and body, during the hours of labour, than a proper attention to the management of sleep, during the period allocated to repose, we are sure our readers will feel obliged by our laying before them I the following remarks on this subject by the celebrated Dr. Abercrombie:

"The chamber in which we sleep should be always large, high-roofed, and airy. In modern houses, these requisites are too much overlooked; and the sleeping apartments sacrificed to the public rooms, which are of great dimensions, while the bed-rooms resemble closets more than anything else. This error is exceedingly detrimental to health. The rooms wherein so great a portion of life is passed should always be roomy, and, if possible, not placed upon the ground floor, because such a situation is apt to be damp and worse ventilated than higher up.

The next consideration applies to the bed itself, which ought to be large, and not placed near to the wall, but at some distance from it, both to avoid any dampness which may exist, and admit a freer circulation of air. The curtains should never be drawn closely together, even in the coldest weather. Some space ought always to be left open; and when the season is not severe, they should be removed altogether. The mattress, or bed, on which we lie, ought always to be rather hard. Nothing is more injurious to health than soft beds; they effeminate the individual, render his flesh soft and flabby, and incapacitate him front undergoing any privation. The texture of which the couch is made, is not of much consequence, provided it be not too soft: hence, feather-beds, or mattresses of flair or straw, are almost equally good, if they are suitable in this particular. I may mention, however, that the hair mattress, from being cooler. and less apt to imbibe moisture, is preferable, at least during the summer season, to a bed of feathers. Those soft yielding feather beds, in which the body sinks deeper, are highly pernicious, as they keep up an unnatural heat, and maintain, during the whole night, a state of exhausting perspiration. Air beds have been lately recommended, but I can assert, from personal experience, that they are the worst that can possibly be employed. They become very soon heated to a most unpleasant degree; and it is impossible to repose upon them with any comfort: the same remark applies to air-pillows, which I several times attempted to use, but was compelled to desist, owing to the disagreeable heat that generated in a few minutes.

The pillow, as well us the bed or mattress, should be pretty hard. When it is too soft, the head soon sinks in it, and becomes very hot and unpleasant.

With regard to the covering, there can be no doubt that it is most wholesome to lie between sheets. Some persons prefer having blankets next their skin, but this, besides being an uncleanly practice, is hurtful to the constitution, as it generates perspiration, and keeps up a heat which cannot but be injurious.

A common custom prevails of warming the bed before we go to sleep. This, also, except with delicate people, and during very cold seasons, is pernicious. It is far better to let the bed be chafed by the natural heat of the body, which, in most cases, even in very severe weather, will be sufficient for the purpose.

We ought never to sleep overloaded with clothes, but have merely what is sufficient to keep up a comfortable warmth, and no more: When this is exceeded, we strait-way perspire, which not only breaks the sleep, but has a bad effect upon the system.

When a person is in health, the atmosphere of his apartment should be cool; on this account fires are exceedingly hurtful, and should never be had recourse to, except when the individual is delicate, or the weather intolerably severe. When they become requisite we should carefully guard against smoke, as fatal accidents have arisen from this cause.

Nothing is so injurious as damp beds. It becomes, therefore, every person, whether at home or abroad, to look to this matter, and see that the bedding on which he lies is thoroughly dry and free from even the slightest moisture. By neglecting such a precaution, rheumatism, colds, inflammations, and death itself may ensue, Indeed, these calamities are very frequently traced to the circumstances of the person's having incautiously slept upon damp bed. For the same reason, the walls and floor of the room should be dry, and wet clothes should never be hung up, as the atmosphere is sure to become inpregnated with a moisture which is highly pernicious. In like manner we should avoid sleeping in a bed that has been occupied by the sick, till the bedding has been cleansed and thoroughly aired. When a person has died of any infectious disease, the clothes in which he lay ought to be burned; and this should be extended to the bed or mattress itself. Even the bedstead should be carefully washed and fumigated.

On going to sleep, all sorts of restraints must be removed from the body; the collar of the night shirt should be unbuttoned, And the neckcloth taken of. With regard to the head, the more lightly it is covered the better: on this account, we should wear a thin cotton or silk night cap; and this is still better if made of net-work; Some persons wear worsted, or flannel caps, but these are; exceedingly improper, and are only justifiable in old or rheumatic subjects. The grand rule of health is to keep the head cool, and the feet warm; hence, the night cap cannot be too thin. In fact, the chief use of this piece of

clothing is to preserve the hair, and prevent it from being disordered and matted together.

Sleeping in stockings is a bad and uncleanly habit, which should never be practised. By accustoming ourselves to do without any covering on the feet, we will seldom experience any uneasy feeling of cold in these parts, provided we have a sufficiency of clothing about us, to keep the rest of the system comfortable, and if, notwithstanding, they still remain cold, this can easily be obviated by wrapping a warm flannel-cloth around them, or by applying to them, for a few minutes, a heated iron, or a bottle of warm water.

The posture of the body must also be attended to. The head should be tolerably elevated, especially in plethoric subjects: consequently, the bolster or pillows must be suitable to this purpose. The position, from the neck downwards, ought to be as nearly as possible horizontal. The half sitting posture, with the shoulders considerably elevated, is exceedingly injurious, as the thoracic and abdominal viscera are thereby compressed, and respiration, digestion, and circulation, materially impeded. Lying upon the back is also improper, in consequence of its bad effect upon the breathing, and tendency to produce nightmare. Most people pass the greater part of the night upon the side, which is certainly the most comfortable position that can be assumed in sleep. According to Dr. A. Hunter, women who love their husbands generally lie on the right side. On this point, I can give no opinion. I have known individuals who could not sleep except upon the back, but these are rare cases."

THE TIMES FOR SLEEP AND STUDY

The R. I. Schoolmaster. July 1856. Vol. 2, No. 5. p. 150. Published by Sage Publications, Inc. Reprinted from the Journal of Health

By all means, sleep enough, and give all in your care sleep enough, by requiring them to go to bed at some regular hour, and to get up at the moment of spontaneous waking in the morning. Never waken up any one, especially children, from a sound sleep, unless there is urgent necessity; it is cruel to do so. To prove this, we have only to notice how fretful and unhappy a child is, when waked up before the nap is out. If the brain is nourished during sleep, it must have most vigor in the morning; hence the morning is the best time for study for then the brain has most strength, most activity, and must work more clearly. It is "the midnight lamp" which floods the world with sickly sentimentalities, with false morals, with rickety theology, and with all those harum-scarum dreams of human elevation, which abnegate Bible teachings.

IMAGINATION DURING SLEEP

The Massachusetts Teacher and Journal of Home and School Education. May 1857. Vol. 10, No. 5. Page 233. Excerpted from "Psychological Inquiries: In a Series of Essays, Intended to Illustrate the Mutual Relations of the Physical Organization and the Mental Faculties." By Sir Benjamin C. Brodie. London: Longman, Brown, Green, and Longmans, 1854.

Sir Benjamin Brodie reasons thus: "In sleep there is an absence of volition. If it be not wholly suspended, it is because the sleep is imperfect. The phantoms of the imagination are never stationary. They succeed each other with such rapidity that they never can be made the subject of contemplation; and very often there is no connection (that is, none that we can trace) between that which comes first and that which follows. That there really are certain laws which regulate their production, I do not doubt, as there are laws which regulate all the phenomena; but, whatever these laws may be, we know little, and generally nothing, of them."

Sir Benjamin Collins Brodie (1783-1862) was a physiologist and surgeon and pioneer in the field of bone and disease. He was a surgeon at St. George's Hospital, London for several decades. He published widely, and his most important work is considered to be his 1818 text, *Pathological and Surgical Observations on the Diseases of the Joints*, which led surgeons to adopt more conservative measures in their treatment of joints, with a resulting reduction in the number of amputations of limbs.

SLEEP A FEW MOMENTS

"G."

The Massachusetts Teacher. Nov. 1864. Vol. 17, No. 11. Pages 365-366. Published by Sage Publications, Inc.

"If he sleep, he shall do well"

We intend these remarks rather for the invalids and for those who may have become venerable with a few years of useful service in our ranks, than for those who are still young, and know nothing yet but exuberant and bounding life; the latter class will find nothing here they will deem of present use; they can make note of it; alas, they may need it by-and-by, but our sincere desire is that late may be the day.

To that other class who know more of infirmity, we say: Rest a little; we mean usually at mid-day, say after the meridian meal; only a few moments, just while the minute hand would pass from one to four; then lie down, or seek the friendly prop of some inviting chair or couch, and there close thine eyes and invite sleep, as many minutes as history has mentioned wise men, or twice as many; and if "balmy sleep" should wave her languid pinions over you, you will wake a new man. It will be a night's rest in a minute, and you will come forth as elastic as the morning.

We are not sure that all have the "art," even of those who, like ourselves, are naturally of a sleepy turn. It may be spontaneous with some, but can only be acquired by most. We can only say by way of "recipe:" Determine to sleep; but let the determination be kept out of sight; think of other things; begin "to say the Catechism," repeat some easy hymn, or count twice fifty, and, as the poet says,

"Ere he is aware,"

the spell is locked, and you have fairly gone down under the Lethean wave, and before you can take any more steps in life's march, you must *wake* as well as rise, and wake you will easily, naturally, without any unmannerly alarm, as soon as the "service is over."

This is a most happy contrivance. The man who first discovered it should be permitted "to take out a patent;" it stops the machinery of life, and restores elasticity to all its springs; it renews the day, and makes the past meridian hours much like the morning. Try it; if you fail once, try again to-morrow; it will lengthen your days. Said an aged, and venerable man: "If I were at work on the galleys, and the object were to wring

as much work from me as possible, they had better let me sleep a few moments at noon."

SLEEP

The Aldine Press. July 1869. Vol. 2, No. 7. Page 60.

Great men go to sleep readily, because, at pleasure, they can command and banish thought. Weak men go to sleep with equal readiness, because they scarcely think at all. He who sleeps readily, healthfully and soundly, is a happier and more fortunate man than the king on his throne who is tortured by watchfulness.

HOW TO SLEEP

Bistoury. Apr. 1873. Vol. 9, No. 1. Page 134. Reprinted from The Science of Health.

We are often asked for a prescription for preternaturally wakeful persons. The "high pressure" principle on which many of our business men work their brains and abuse their bodies, begets an irritable condition of the nerves, and a morbid state of mind, very antagonistic to quiet and refreshing sleep. Such persons will often go to bed weary and exhausted, but cannot sleep; or sleep dreamily and fitfully; or lie awake for hours unable to sleep at all. We have tried many expedients to induce sleep with more or less success, and have read many recipes which proved better in theory than in practice. The very best method we have yet discovered is that of counting. Breathe deeply and slowly (without any straining effort) and, with every expiration, count one, two, three, etc., up to a hundred. Some persons will be asleep before they can count fifty in this manner. Others will count ten, twenty, or thirty, and then forget themselves and cease counting. In such cases always commence again at once. Very few persons can count a hundred and find themselves awake; but should this happen, repeat the dose until cured.

SUPPER AND SLEEP

The Hospital (London). Oct. 8, 1887. Vol. 3, No. 54. Pages 21-22.

The people who dine at eight o'clock need not read this sermon unless they please. There is a vast number who from convenience or necessity find themselves dining at one or two, and for these the question of supper is deserving of a little intelligent consideration. The only thought many of them are inclined to give to it is expressed in the formula, "I must ask the doctor"; and if, as will sometime happen, the doctor is not a very wise man, the answer he will give may be anything but a valuable contribution to the subject. In these days of specialism there is a tendency on the part of the public to leave everything to specialists, and to exercise their own individual judgment as little as possible. That is not merely a mistake, it is wicked idleness and intellectual cowardliness; and will inevitably meet with its just punishment in due time. Specialists are valuable persons—most valuable; but their value is generally of a limited character. In their own particular subject or range of subjects, whether that subject be snails, or crayfish, or kangaroos, or elephants, or physiologists, then words are mostly words of knowledge, and frequently words of wisdom; and he who has the opportunity should draw large cheques on their scientific banks. But there is a region in which the only infallible guide for John Smith is John Smith, and that region is the domain of personal experience. Of course, if John Smith be a born and utterly incapable noodle, he should ask some one to guide him even in this region. If he is not able to say whether or not he likes buttered muffins, or whether a heavy supper of lobster salad and cheese agrees with him, then by all means let such a poor creature ask the doctor, and when he has asked him, take his advice on peril of nightmare or suicidal hypochondria. But in the case of a man of ordinary intelligence and average strength of mind the supper question is emphatically one to be decided by himself. Here, at any rate, it will be taken for granted that such a course is possible and natural, and all that we propose to do is to offer some considerations which shall guide him to a right decision.

And first—the question is one not be decided by mere abstract reasoning, or what may be called "academic physiology." Experience is a much despised, but truly great teacher. "*Experientia docet*" [Experience teaches]says one proverb: "Experience makes fools wise," says another. An experience, be it remembered, need not necessarily be merely that of the individual. There is such a thing as learning from other people's experience. Instinct, too, is a fact to be regarded. This in its pure form is hardly to be met with in man, either adult or young. But the domestic animals are at hand to be appealed to. On this question of supper, what say the horse and the cow, the cat and the

dog? Do they differ in opinion and habit, or do they all agree? They are all emphatically of the same mind and practice. Each of them takes a good supper when the means are available; and it may be affirmed as a general truth that sleeplessness among them is unknown.

These animals, it may be argued, are in a state of nature. Nothing of the kind! They are domesticated and civilised according to their measure just as much as we are. When a horse is turned into a field on a summer evening the first thing he will probably do is to take a little gallop and fling up his heels; then perhaps he will lie down and "roll" for a minute or two; then up he springs and gives himself a few vigorous shakes; and then down goes his head to the grass. From that time onward he gnarls industriously at the short, sweet herbage until his sides are blown out like a barrel; and then he lies down to sleep the sleep of industry and an honest conscience. In the winter, when he is in the stable, his groom gives him a large meal about eight o'clock in the evening. Without such a meal he would stand unsatisfied in his stall; when he lay down his sleep would be restless; and when he got up in the morning he would be unrefreshed and unequal to the work of the day. There is an argument worthy of some consideration. It is not conclusive and final, but it is a help to decision.

Now take the case of individual men and women. They dine, we will say at two. At six a light meal of tea and bread-and-butter is taken. The activities of the day continue until ten or eleven. Has the stomach digested the dinner and tea completely or not? Undoubtedly both have undergone complete digestion by half-past eight, or nine at the latest. And then, as sleep has not commenced, a more or less considerable degree of hunger will assert itself. The problem is how to deal with the hunger so as to secure sound sleep and cheerful awakening. The solution is, to satisfy the appetite in such a way as to induce easy and unconscious digestion. These are the two points on which the mind must be fixed. The appetite must be satisfied, but satisfied with such a quantity and kind of food as shall be digested unconsciously. Here it is that the element of individual sense and experience is of such high value. What can you digest with comfort at ten o'clock at night? That is the question. Are you a sportsman or a working farmer, or a navvy, and do you find a pound of steak, with pickled onions, half a bread-loaf, and a foaming pint of bitter ale quite to your liking, and productive of amiability and a feeling of gentle somnolence? Then that is the supper for you. Only you do not need the occupant of the doctor's pulpit to tell you so. Your physiological morals are so sound that no preacher is of any service to you.

But how few are in this happy condition! The studious, high-strung, and worried parson would shudder at the sight of such a monstrous feast. The nervous and delicate woman whose means are limited, and whose husband and family make large demands upon her small reserves of patience and domestic skill—what will she do if she finds herself at a Friar Tuck banquet of that kind? The physiological law is made for the

physiological transgressor, and the doctor's gospel of hope and help is for the weak and erring in appetite and digestion. It is very seldom that people in feeble health sleep well after a heavy supper; and it is just as likely they will have a restless night if they go to bed without any supper at all. It is impossible to tell every such person exactly what to do at all times, but as a rule this is the best kind of meal for them to take at bedtime: *a meal of rather large bulk, but very easy of digestion*. The quantity is needed to satisfy the craving of the appetite; but as the digestion, like the rest of the economy, is then fatigued and demanding sleep, the quality must be such as to allow of this function taking place with the least possible physiological effort. As an example of what is meant by a bulky meal easy of digestion, may be mentioned a large bowl of boiled bread and milk. The bread should be abundant, stale, and well soaked in the milk. This is a most satisfying supper, and highly conducive to sleep! Some people, however, cannot take milk in any form. Perhaps, in certain cases, a fair quantity of plain boiled whitefish, with one or two potatoes and stale bread, and a glass of cold or hot water or bitter ale or stout, will be found suitable. There are now in the market a large number of farinaceous preparations, both malted and unmixed. By a little taste and judgment these may be made into an almost infinite variety of bulky supper dishes. If the farinaceous food of itself be found unpalatable, veal or chicken broth, with plenty of stale bread soaked in it, as in the boiled milk, will often be relished. A common supper, and one well worthy of a trial, is a breakfast-cup of good cocoa, with plenty of bread and butter. Many people can digest the finer cheeses, such as Gruyère, Gorgonzola, Cheddar, Gloucester, etc. Those who can may be encouraged to partake of them in moderation. An excellent supper dish is tripe, with plenty of bread and a glass of light wine, such as hock or chablis. Strong wines and spirits at bedtime should generally be avoided. Some people sleep well after what they call a "night-cap," which in Scotland means a glass of hot whiskey-toddy of no mean strength; but the majority of people are far better without it. Probably no class of people sleep sounder or have better health than total abstainers: and they, as a rule, display healthy appetites at all regular meals.

Perhaps we have said enough to indicate generally whether or not suppers should be taken, and what kind of suppers they should be if they are taken. If a person has proved by experience that for him or her "supperless to bed" means sound sleep and a refreshed awakening, then by all means let such a person continue the supperless habit so long as it continues to be so satisfactory in its results. But to those who are in doubt and frequent discomfort from irregularity and uncertainty about the last meal of the day, we can recommend an intelligent and prolonged trial on the lines here laid down.

MIDNIGHT OIL OR MIDNIGHT SLEEP?

The Hospital (London). Sept. 19, 1891. Vol. 10, No. 260. Pages 287-288.

Professors and lecturers are generally very grave men. Most of us are grave in proportion to the weight we have to carry in life. No weight is so burdensome as the sense of one's own dignity and importance. The college professor is, therefore, to be deeply sympathised with when his looks and behaviour betoken a gravity which is quite preternatural. Some of us remember the professor of a quarter of a century ago; his measured walk, his spectacles, his careful pronunciation, his ancient saws and modern instances. He believed in midnight oil; his students, it is to be feared, too often believed in midnight tobacco and imperial pints of Bass's ale.

Nowadays every man is physiological, or he is nothing. For even a soldier or a school inspector to confess that he knows nothing of physiology is to confess that he is like a six days' old kitten, whose eyes are not yet opened to see the true intellectual light and sun of the end of the century. The physiologist, like Mr. J. L. Toole in "Paul Pry," has his eye on the midnight oil—his eye and his spectacles. What has the physiologist to say to the midnight oil? He has so much to say that he puts down his umbrella, adjusts his coat collar and his wristbands, and prepares himself for a serious half-hour of gravely scientific remonstrance and denunciation.

The brain must work, but it must also rest. The brain that rests best works best and longest. The brain that uses the midnight oil cannot rest. It is like the troubled sea in that it tosses too much when it attempts to sleep. It is also like the troubled sea in that it "throws up a great deal of mire and dirt" when literature happens to be its peculiar work. Midnight oil "came in" long before physiology. The records of its fossil period speak of sublapsarianism and supralapsarianism, of pre-established harmony and prevenient grace. Fine old definitions and formulisations they were, and served the useful purpose of keeping many inconsequent people amused and employed through the centuries known as the dark ages. But the times have changed, and with their change the human spirit has become at least more energetic and curious. It will not have the ancient definitions at any price.

Physiology is a bold questioner. She had need be bold in such a tradition and custom ridden world as this. What astonishing propositions the metaphysicians and the priests of all ages, from that of Artemis downwards, have insisted that sane men shall believe! Physiology soberly asks for reasons, and insists upon experience. What is her challenge to the trimmers of the midnight lamp? "Show me the fruits of your labours," she says,

"the fruits as seen in the work you have produced; and as seen also in yourselves, the workers." The most whimsical of all the conclusions of philosophy are those which have been reached by workers who worked when other men were asleep. The sermons which contain the least admixture of sober sense with the largest expansion of fanaticism and intellectual feebleness are those which smell most of the midnight oil. Men who can go back upon a long and varied experience of college life can remember what musty and pompous inanities those professors were who solemnly advised that work should be continued late as well as early, and should seldom be left off, even at midday!

The earnest medical student is the very last man in the world who should burn the midnight oil. His work is work which does not demand memory only, but thought. The only way by which the mere facts of chemistry and anatomy, for example, can be got to remain in the mind, is to first understand them thoroughly. They cannot be learned by rote as the parrot learns his lessons. They must be taken into the consciousness as clearly comprehended statements and things. But if a man begins at seven o'clock and works on until midnight in the way here described, how is his roused and excited brain to cease working when he goes to bed? It does not cease. The cells continue their activity, the coursing blood, rushing to the brain in response to the demand made for it by the energetic molecules, continues to flow onward through the distended cerebral vessels and makes sleep impossible. One o'clock comes, and the brain cells and blood currents are only beginning to sober down. Two strikes, and an uneasy sleep is stealing over the senses that still even in their unconsciousness strive to master and retain the new facts which have been forced upon the cerebral nerves and their centres. Not perhaps until three in the morning is sound and refreshing sleep obtained. At seven the diligent student is again up, and has his head and body submerged in the stimulating bath. His physique is splendid; and for a time the work and want of sufficient rest hardly seem to tell upon him at all. He feels all the exhilaration and defiance of a successful conqueror.

Is it possible to make the student of three and twenty believe in reckoning days? Hardly! But he will know all about them long before he is three-and-forty. Not even the worried business man knows so well as the hard-worked medical scientist of ripe experience, the unalterable logic of spending and ending. Physiological resources, although they are very elastic within limits, yet have limits which are so sharply defined, that to step beyond them often means absolute bodily and mental ruin. There is no overstepping of the limit which is more dangerous than that of doing work which curtails sleep. Sound and sufficient sleep is the most indispensable of all the conditions of a sound and efficient brain. The miseries alone of the sleepless man are creditors which the most stoical may dread; his incapacities are such that great work and great success are generally as hopeless for him as the possibility of riding through the air

without a balloon or wings. Ten years of such sleeplessness as some men have endured would cure the most ardent medical enthusiast in the world of his passion for the midnight oil.

But if men do not work late and early, how are they to gain the honours which are to distinguish them from the crowd, and to form the starting point of the success of their after lives? A most practical and urgent question, but a question which sober experience is much more likely to answer wisely than youthful eagerness and ambition. The greatest and highest success in life is achieved, like the winning of a long race, by him who has the greatest staying power. What is the best of all the possible kinds of brain for a man who has to follow throughout his life an intellectual calling like that of the higher walks of medicine? It is a brain that is at once clear and strong. Undue and prolonged mental exertion in the student period may give great clearness of intellect; possibly even an abnormal clearness; but it can never give strength. Clearness without strength can no more win in the long and arduous race of life than speed without staying power can win in a foot race of ten miles. Unintelligent and impulsive medical professors—and there are many such—may urge men to competition for the highest college honours, even at the risk of a total breakdown in brain and body. Such professors are among the worst enemies young men can have, and they are among the worst enemies the medical school and the medical profession can have. What the medical profession demands is men of clear and strong intellect, full of practical resources, not mere dilettanti speculators in incomprehensible medical hypotheses. Sublapsarianism and supralapsarianism have their equivalents and their ridiculous professors in the medicine of to-day as they had in the theology of a long past time. What honest and capable man desires to be a medical acrobat, or a tight-rope dancer? He prefers a less "elevated," though much more useful and honourable kind of occupation.

The day is the time for work: the night for sleep: sleep sound, quiet, and peaceful as death. The learned medical professor tells his students all this in his book or his lecture. But he seldom thinks of asking them to apply his lofty and ideal principles to the details of their own lives. The medical student who attends lectures and hospital work for three or four hours daily, and reads steadily and well for four or five hours more does amply sufficient both for honour and profit. Whatever he may do in the class or the professional examinations he will certainly beat the midnight-oil man in the greater and more prolonged "examination of life." The first thing that the world demands of professors and teachers of all kinds is that they shall practice their own principles. A teacher of physiology who encourages brain work at midnight ought to be considered insane.

BRAIN REST AND SLEEP

Dental Register. June 1892. Vol. 46. No. 6. Pages 296-297.

The tendency of the present time, especially in our own country, is more than at any other time in the history of our country, to mental overwork and exhaustion of the brain forces.

The circumstances surrounding active professional life of to-day are such that the nervous system must be of the most perfect character to resist the immense strain made upon it. When one observes the influences brought to bear upon one in active city business, it is a source of surprise that there are not more cases of insanity from brain exhaustion. The demand of the time is for a far greater amount of brain rest, for longer periods from business, confusion, excitement, and the care, anxiety and responsibility of everyday business. In addition to the hours assigned to one's daily employment, there are engagements made, which seem essential, which encroach so largely on one's sleep, that when we are brought to think carefully on the matter, we are surprised with the small amount of sleep with which we endeavor to get along. The fact is proven beyond a doubt, that one-third of our time should be spent in sleep—quiet, restful, natural, refreshing sleep. Instead of this, many men, especially literary men, habitually starve the brain incessantly in this matter, until they induce an incurable insomnia. An irritable man, cross, pettish, disagreeable, can nearly always be put down as one who takes little sleep. A self-composed man, quiet, thoughtful, of pleasant disposition and genial nature may be known as one who is not ashamed to acknowledge that he insists upon having his full quota of sleep. Sleep is nature's great restorer, it is the best and most natural tonic to the nervous system known. Freedom from care and responsibility, a pleasant surrounding atmosphere, a good digestion, and full term of sleep, if demanded by every man would lengthen the life of the present generation from five to twenty years. It is a good plan for brain workers to take a nap after dinner. This plan is objected to by many physicians, but it is a good plan in many cases, perhaps not universally applicable, but of great value to those whose appetites and digestion must be encouraged, and who are troubled with a mild form of insomnia. These will stand their laborious work better, and will suffer less upon the loss of their regular sleep. There are some men who have stood an enormous amount of work with but very little sleep. These, it is believed, have the power to rest certain portions of the brain while other portions of the brain are active. This fact is applicable, however, to but very few men, the majority need an abundance of sleep, and the hours spent in sleep in these cases will be more than added to their term of years.

THE SLEEPING HABIT

Dental Register. Mar. 1893. Vol. 47, No. 3. Page 129.

Sleeping well should be as much a habit as bad sleeping. Early rising does much to favor sound sleep; and one secret of the perfect sleep of the country people is that they retire early and fatigued, and have perfect quiet around them. The conditions favoring sleep are perfect quiet, fatigue to more or less extent, darkness, a full meal, continuous monotony—as of a dull sermon or recitation, the quiet splash of the sea—freedom from pain, and warm extremities.

RECUPERATING EFFECT OF SLEEP

Dental Register. Feb. 1898. Vol. 52, No. 2. Page 75. Reprinted from the New York Medical Times.

Here is an explanation of the recuperating effect of sleep, which it is important for all to consider: Nature takes the time, when one is lying down, to give the heart rest, and that organ consequently makes ten strokes less a minute than when one is in an upright posture. Multiply that by sixty minutes and it is 600 strokes. Therefore in eight hours spent in lying down the heart is saved nearly 5,000 strokes, and as the heart pumps six ounces of blood with each stroke, it lifts 30,000 ounces less of blood in a night of eight hours spent in bed than when one is in an upright position. As the blood flows so much more slowly through the veins when one is lying down extra covering is needed to supply the body with the warmth usually furnished by circulation.

HOW TO INDUCE SLEEP

Texas Medical Journal (Austin). Sept. 1898. Vol 14, No. 3. Pages 138-139. Reprinted from Public Health.

Sleep ensues when the brain is largely denuded of blood, when cerebral anemia is established. To partly empty the brain of its blood supply, to keep the head cool, the body sufficiently warm, and to send the blood rather to the lower extremities—this is the physical problem of the sleepless. It is interesting to note that during sleep a great number of the bodily functions continue quite normally without interfering with sleep itself, and therefore sleep is not so like death as some of the poets have imagined. Man asleep is not so profoundly different from man awake, the two chief points of difference, however, being these: a greater indrawing of oxygen and exhalation of carbonic acid, and a complete vaso-motor rest. The bedroom and the state of occupant (assuming the absence of external noise) are the chief factors in the problem.

The sleeping room should be airy and cool, never, for adult persons, reaching a higher temperature than 60°, though young children need greater warmth. The head should never be under the sheets, but exposed and cool. The feet should be kept warm by a little extra clothing at the foot. With a heavy sleeper there should be no thick curtains, but with a light sleeper curtains are essential, as sunlight plays upon the optic nerve and rouses that attention which it is the one object of the sleeper to keep in suspended animation. The bed should never be between fireplace and door, as it catches the draughts, and is more dangerous and more easy to contract a chill in bed than in the daytime, the especially chilly period being about 3 a.m.

REST AND SLEEP

J. Cam Anderson

Medical Brief. 1899. Vol. 27. Pages 692-693.

This is a fast age as compared with a half or even a quarter of a century ago. Fast, reckless living. In order to keep up in the busy whirl of life, many exert themselves beyond their strength, and many even fall by the wayside, and give up the struggle; many bring on disease and have to drag out a miserable existence, and some few, yes, a great many, as a consequence, "shuffle off this mortal coil" by suicide. There are many routes, and each selects his peculiar way.

Fast living in a fast age. Is there no remedy to help poor, unfortunate victims of the "pride of life?" Yes, largely, there is, if people would only stop and think and apply the remedy. What is it? Brain rest and sleep.

The tendency of the age is more now, than at any other time in the history of this country, to mental over-work and strain, and exhaustion of physical and brain force. "The errors and indiscretions of youth are drafts upon old age, if one should live so long, payable forty years after date, with compound interest." This is a fearful thought. Yet, how true. How true it is, more or less, of every individual.

The circumstances surrounding active professional life, to-day, are such that the nervous system must be of the most perfect character to resist and stand the immense strain made upon it.

When you think of the influences brought to bear upon one in active city business, it is a wonder and a source of surprise that there are not even more cases of insanity from brain exhaustion, leading on to the common fatality, suicide. What will tend to prevent? Brain rest and sleep.

The demand of the times is for a greater amount of brain rest, longer periods from business cares and worries, confusion, excitement, anxiety and responsibilities. We are a nation of dyspeptics, from fast living, over eating, lack of brain rest and sleep.

Working and worrying six days of the week, and oftentimes Sunday, too, all day long, nearly all night, day in and day out. We stand it for awhile, but what is the result? Disease, insanity and death; premature, sad, but true.

It is a scientific fact that one third of our time should be spent in sleep; quiet, restful, natural, refreshing sleep. But, instead of this, how is it? How is it with you, my reader? Think about it and see if you are just to your own self in this particular.

Many men, and especially literary men, writers, preachers, lawyers and doctors, all, more or less, starve the brain incessantly in this matter, until they bring on a partial, and sometimes an incurable insomnia. An irritable man, cross, pettish, peevish, disagreeable and easy "fly off the handle" and get mad as a "wet hen" on the slightest provocation, can nearly always be classed as one who does not get or take sleep enough. A self-composed, placid, quiet, thoughtful, even tempered, genial-natured man, may be known as one who not only insists upon having his full quota of sleep, but one who takes it—eight good, solid hours of sleep and rest.

From a medical standpoint, dear reader, let me impress upon you that sleep, natural sleep, is the best and only natural tonic to the nervous system, known, and all other so-called tonics, are stimulants. Nature's tonics are exercise, pure air and water, sunshine and sleep, all else are stimulants, and oftentimes harmful, instead of being conducive to health.

Brain rest and sleep, freedom from care, anxiety and responsibility, pure air and water, health exercise, regulated diet, good digestion—and this generally brings it—and full eight hours of sleep, would lengthen the life of the present generation from ten to thirty years.

Go slow and sure, is a good rule, but the age won't let you. Here we go, pell-mell, helter-skelter, on, on, in the mad rush, headlong, heels overhead. What is the result? Sooner or later (and generally sooner), a wreck, body and mind, and probably soul, avarice, love of money. Stop and think. Apply the scripture: "What doth it profit a man if he gain the whole world, and lose his own soul?" or "What shall a man give in exchange for his soul?"

'Tis a good plan for busy brain workers to rest in daytime. Take time to rest and let the brain recuperate. The after-dinner nap, ten or twenty minutes, is good. This is a fact, demonstrated by experience and observation. Rest the body and mind. Give Nature a chance and she will cure you. The physician only aids Nature. When you are sick, go study and give Nature her way and you will get there with both feet and right side up with care. Especially valuable is this momentary resting down on the parlor sofa or out in the wood-shed on the ground, to those whose appetites and digestion must be encouraged, and who are in only a small degree troubled with insomnia, or sleeplessness. Doctor, when you get this class of patients, quiet your patient's nervous system, artificially, naturally, or by imagination, and get sleep, restful sleep. Your patient, when all else is favorable, ten to one, will get well.

REST AND SLEEP.

The person, or the busy-brain worker who will habitually rest in day time, this is outside of eight hours (good long sixty minutes to the hour) at night, a few minutes,

when tired, or worried, will stand his work better and longer, and suffer less, when forced to lose some of the regular hours to sleep. There are some men who have stood terrible strain on the nervous system, and an enormous amount of work, with but little sleep, but all suffered more or less, by it. Some, it is believed, have the power to rest certain portions of the brain, while other parts of brain are in active service. No doubt this is true; but the fact is applicable, however, to a limited few. The vast majority need, and must have an abundance of good old sleep, and the hours spent in sleep in these cases of brainworkers will be more than added to their term of years. As the fellow said, who was slightly intoxicated: "Hurrah,—boys, whooray—hic—I say—hoor—ray, hic—I say—hic hurrah for old Christmas—old Crismus." I say, hurrah for old sleep, good old, healthy, warm sleep; without it we would all soon be dead, and many are slowly dying for the want of it, and solely because, in this fast age, they just won't take the time to take it.

In conclusion, dear reader, let me say, go slow, take time for all things. Take time to think, to eat, to rest, to sleep, and don't rush along in your wild career after this world's goods. Go slow, take your time, "before the silver cord be loosened, or the golden bowl be broken." But be ready when the summons comes, "For ye know not the day nor the hour wherein the Son of man cometh." But work, and work now, and also rest, remembering "the night cometh when no man can work." And at last, when it is ours, in the very nature of things, to lie down and die, let us join in with the immortal Jackson, as he lay dying of wounds in defense of his country, his last memorable words, "Let us pass over the river, and rest under the shade of the trees." Rest, rest, sweet rest.

J. Cam Anderson (1858-1906) was a small-town doctor and druggist in Holston Bridge and Gate City, Virginia.

POEMS

Young Woman Asleep, by Paolo Ventri, 1870s. National Gallery of Art

TO SLEEP

Walter Savage Landor

Come, Sleep! but mind ye! if you come without
The little girl that struck me at the rout,
By Jove! I would not give you half-a-crown
For all your poppy-heads and all your down.

Walter Savage Landor (1775-1854) was an English writer and poet known for his classical style and sharp wit. He produced voluminous work in many genres, including prose, lyric poetry, political writings, and Latin. One of his most significant works is "Imaginary Conversations" (1824-1829), a series of prose dialogues between historical and fictional characters.

NOCTURNE

Gerald Griffin

Sleep that like the couched dove
Broods o'er the weary eye,
Dreams that with soft heavings move
The heart of memory,
Labor's guerdon, golden rest,
Wrap thee in its downy vest,—
Fall like comfort on thy brain
And sing the hush song to thy pain!

Far from thee be startling fears,
And dreams the guilty dream;
No banshee scare thy drowsy ears
With her ill-omen'd scream;
But tones of fairy minstrelsy
Float like the ghosts of sound o'er thee,
Soft as the chapel's distant bell,
And lull thee to a sweet farewell.

Ye for whom the ashy hearth
The fearful housewife clears,
Ye whose tiny sounds of mirth
The nighted carman hears,
Ye whose pygmy hammers make
The wonderers of the cottage wake,
Noiseless be your airy flight,
Silent as the still moonlight.

Silent go, and harmless come,
Fairies of the stream:
Ye, who love the winter gloom
Or the gay moonbeam,
Hither bring your drowsy store
Gather'd from the bright lusmore;
Shake o'er temples, soft and deep,
The comfort of the poor man, sleep.

Gerald Griffin (1803-1840) was an Irish-born novelist, poet, and playwright. In 1827 published his first volume of stories, *Holland Tide*. This was followed by another series of tales and his novel, *The Collegians.* In 1838, Griffin burnt all of his unpublished manuscripts and joined the Congregation of Christian Brothers , a Catholic religious order which has as its special aim the education of children of the poor.

CHILD'S EVENING HYMN

Sabine Baring-Gould

Now the day is over,
Night is drawing nigh,
Shadows of the evening
Steal across the sky.

Now the darkness gathers,
Stars begin to peep,
Birds and beasts and flowers
Soon will be asleep.

Jesu, give the weary
Calm and sweet repose;
With thy tenderest blessing
May our eyelids close.

Grant to little children
Visions bright of thee;
Guard the sailors tossing
On the deep blue sea.

Comfort every sufferer
Watching late in pain;
Those who plan some evil
From their sin restrain.

Through the long night-watches
May thine angels spread
Their white wings above me,

Watching round my bed.

When the morning wakens,
Then may I arise
Pure and fresh and sinless
In thy holy eyes.

Glory to the Father,
Glory to the Son,
And to thee, bless'd Spirit,
Whilst all ages run. AMEN.

Sabine Baring-Gould (1834-1924) was an English writer of diverse genres, as well as being a scholar, Anglican priest, folk song collector, and antiquarian. He is best remembered as being the writer of "Onward, Christian Soldiers" and other hymns, including "Children's Evening Hymn."

BEDTIME

Francis Robert St Clair-Erskine, Earl of Rosslyn

'Tis bedtime; say your hymn, and bid "Good-night;
God bless Mamma, Papa, and dear ones all."
Your half-shut eyes beneath your eyelids fall,
Another minute, you will shut them quite.
Yes, I will carry you, put out the light,
And tuck you up, although you are so tall!
What will you give me, sleepy one, and call
My wages, if I settle you all right?

I laid her golden curls upon my arm,
I drew her little feet within my hand,
Her rosy palms were joined in trustful bliss,
Her heart next mine beat gently, soft and warm
She nestled to me, and, by Love's command,
Paid me my precious wages—"Baby's Kiss."

Robert Francis St Clair-Erskine, the 4th Earl of Rosslyn (1833-1890) was a British Conservative Politician who served as Captain of the Gentleman-at-Arms under Lord Salisbury. "Bedtime" (1882) and "Insomnia"are taken from his 1883 book *Sonnets by the Earl of Rosslyn* and 1889's *Sonnets and Poems by the Earl of Rossyln*.

SEA SLUMBER-SONG

Roden Berkeley Wriothesley Noel

Sea-Birds are asleep,
The world forgets to weep,
Sea murmurs her soft slumber-song
On the shadowy sand
Of this elfin land;
"I, the Mother mild,
Hush thee, O my child,
Forget the voices wild!
Isles in elfin light
Dream, the rocks and caves,
Lull'd by whispering waves,
Veil their marbles bright,
Foam glimmers faintly white
Upon the shelly sand
Of this elfin land;
Sea-sound, like violins,
To slumber woos and wins,
I murmur my soft slumber-song,
Leave woes, and wails, and sins,
Ocean's shadowy might
Breathes goodnight,
    Good-night!"

Hon. Roden Berkeley Wriothesley Noel (1834-1894), was a British poet, critic, biographer, and philosopher. The son of the Earl of Gainsborough (second creation), he was the author of numerous publications including "Beatrice and Other Poems," (1868),

“The Red Flag,”(1872), “A Little Child’s Monument,” (1881), and “A Modern Faust ” (1888). “Sea-Slumber Song” was set to music by Edward Elgar, as part of his “Sea Pictures” song-cycle.

HALF-WAKING

William Allingham

I thought it was the little bed
I slept in long ago;
A straight white curtain at the head,
And two smooth knobs below.

I thought I saw the nursery fire,
And in a chair well-known
My mother sat, and did not tire
With reading all alone.

If I should make the slightest sound
To show that I 'm awake,
She'd rise, and lap the blankets round,
My pillow softly shake;

Kiss me, and turn my face to see
The shadows on the wall,
And then sing "Rousseau's Dream" to me,
Till fast asleep I fall.

But this is not my little bed;
That time is far away:
With strangers now I live instead,
From dreary day to day.

William Allingham (1824-1889) was an Irish poet, diarist, editor and balladist. He wrote several volumes of lyric verse. His best-known works are the poem "The Faeries,"

which was widely anthologized, and his posthumously published *Diary*, which documented his encounters with writers and artists.

FRAGMENT OF A SLEEP-SONG

Sydney Dobell

Sister Simplicitie,
Sing, sing a song to me,
Sing me to sleep.
Some legend low and long,
Slow as the summer song
Of the dull Deep.

Some legend long and low,
Whose equal ebb and flow
To and fro creep
On the dim marge of gray
'Tween the soul's night and day,
Washing "awake" away
Into "asleep."

Some legend low and long,
Never so weak or strong
As to let go
While it can hold this heart
Withouten sigh or smart,
Or as to hold this heart
When it sighs "No."

Some long low swaying song,
As the sway'd shadow long
Sways to and fro
Where, thro' the crowing cocks,

And by the swinging clocks,
Some weary mother rocks
Some weary woe.

Sing up and down to me
Like a dream-boat at sea,
So, and still so,
Float through the “then” and “when,”
Rising from when to then,
Sinking from then to when
While the waves go.

Low and high, high and low,
Now and then, then and now,
Now, now;
And when the now is then, and when the then is now,
And when the low is high, and when the high is low,
Low, low;
Let me float, let the boat
Go, go;
Let me glide, let me slide
Slow, slow;
Gliding boat, sliding boat,
Slow, slow;
Glide away, slide away
So, so.

Sydney Thompson Dobell (1824-1874) was an English poet and critic. He succeeded his father in the wine trade, and produced several volumes of poetry, and a political pamphlet on reform in parliamentary elections. “The Roman,” a dramatic poem, was published in 1850, followed by “Balder,” (1854), and “Sonnets of the War,” (1855) in which he collaborated with Alexander Smith, and “England in Time of War,” (1856).

DAY IS DEAD

Augusta Webster

Day is dead, and let us sleep,
Sleep a while or sleep for aye;
'T were the best if we unknew
While to-morrow dawn'd and grew;
It may bring us time to weep:
We were glad to-day.
Joy for a little while is won,
Joy is ending while begun;
Then the setting of the sun;
Afterwards is long to rue.

Augusta Davies Webster (1837-1894) was a poet, dramatist, essayist and translator. Born in Dorset, she published her first collection, "Blanche Lisle and Other Poems," using the pseudonym "Cecil Home." She was the author of several metrical dramas, and translated several Greek tragedies. She was acclaimed as a writer during her lifetime, and her reputation has been revived in recent decades.

ROCK ME TO SLEEP

Elizabeth Akers Allen

Backward, turn backward, O Time, in your flight,
Make me a child again just for to-night!
Mother, come back from the echoless shore,
Take me again to your heart as of yore;
Kiss from my forehead the furrows of care,
Smooth the few silver threads out of my hair;
Over my slumbers your loving watch keep;—
Rock me to sleep, mother,—rock me to sleep!

Backward, flow backward, O tide of the years!
I am so weary of toil and of tears,—
Toil without recompense, tears all in vain,—
Take them, and give me my childhood again!
I have grown weary of dust and decay,—
Weary of flinging my soul-wealth away;
Weary of sowing for others to reap;—
Rock me to sleep, mother,—rock me to sleep!

Tired of the hollow, the base, the untrue,
Mother, O mother, my heart calls for you!
Many a summer the grass has grown green,
Blossomed and faded, our faces between:
Yet, with strong yearning and passionate pain,
Long I to-night for your presence again.
Come from the silence so long and so deep;—

Rock me to sleep, mother,—rock me to sleep!

Over my heart, in the days that are flown,
No love like mother-love ever has shone;
No other worship abides and endures,—
Faithful, unselfish, and patient like yours:
None like a mother can charm away pain
From the sick soul and the world-weary brain.
Slumber's soft calms o'er my heavy lids creep;—
Rock me to sleep, mother,—rock me to sleep!

Come, let your brown hair, just lighted with gold,
Fall on your shoulders again as of old;
Let it drop over my forehead to-night,
Shading my faint eyes away from the light;
For with its sunny-edged shadows once more
Haply will throng the sweet visions of yore;
Lovingly, softly, its bright billows sweep;—
Rock me to sleep, mother,—rock me to sleep!

Mother, dear mother, the years have been long
Since I last listened your lullaby song:
Sing, then, and unto my soul it shall seem
Womanhood's years have been only a dream.
Clasped to your heart in a loving embrace,
With your light lashes just sweeping my face,
Never hereafter to wake or to weep;—
Rock me to sleep, mother,—rock me to sleep!

Elizabeth Ann Chase Akers Allen (1832-1911) was an American poet and journalist. Many of her early poems, which were initially published in the "Portland (Maine) Transcript", under the pen name of "Florence Percy". She worked as an editor for the

“Portland Advertiser” for a number of years. She contributed to numerous prestigious periodicals, and her collected poetry were published in multiple editions.

NIGHT AFTER NIGHT

Gertrude Bloede

Night after night we dauntlessly embark
On slumber's stream, in whose deep waves are drowned
Sorrow and care, and with all senses bound
Drift for a while beneath the sombre arc
Of that full circle made of light and dark
Called life, yet have no fear, and know refound
Lost consciousness shall be, even at the sound
Of the first warble of some early lark
Or touch of sunbeam. Oh, and why not then
Lie down to our last sleep, still trusting Him
Who guided us so oft through shadows dim,
Believing somewhere on our sense again
Some lark's sweet note, some golden beam, shall break,
And with glad voices cry, "Awake! awake!"

Gertrude Bloede (1845-1905) was a German-born poet, whose family emigrated to Brooklyn in her childhood. She published under the pen name "Stuart Sterne". She was the author of the novel *The Story of Two Lives*, and numerous collections of poetry.

TO SLEEP

Maybury Fleming

Sweet wooded way in life, forgetful Sleep!
Dim, drowsy realm where restful shadows fall,
And where the world's glare enters not at all,
Or in soft glimmer making rest more deep;
Where sound comes not, or else like brooks that keep
The world's noise out, as by a slumberous wall
Of gentlest murmur; where still whispers call
To smileless gladness those that waking weep;
Beneath the dense veil of thy stirless leaves,
Where no air is except the calm of space,
Vexed souls of men have grateful widow-hood
Of tedious sense; there thoughts are bound in sheaves
By viewless hands as silent as the place;
And man, unsinning, finds all nature good.

Maybury Fleming (1853-?), was a journalist from Boston. He was on the editorial staff of the N.Y. Mail and Express, and his poems appeared in magazines of his era.

SLEEP

Alice Brown

Withdraw thee, soul, from strife.
Enter thine unseen bark,
And sail across the dark,
The silent sea of life.
Leave Care and Grief, feared now no more,
To wave and beckon from the shore.

Thy tenement is bare.
Shut are the burning eyes,
Ears deaf against surprise,
Limbs in a posture fair.
The body sleeps, unheeding thee,
And thou, my sailing soul, art free.

Rouse not to choose thy way;
To make it long or short,
Or seek some golden port
In haste, ere springs the day.
Desire is naught, and effort vain:
Here he who seeks shall ne'er attain.

Dream-winged, thy boat may drift
Where lands lie warm in light;
Or sail, with silent flight,
Oblivion cleaving swift.

Still, dusk or dawning, art thou blest,

O Fortune's darling, dowered with rest!

Alice Brown (1857-1948) was a prolific writer of novels, poetry, and plays. She lived in Boston, and is best known as a writer of regional "local color" stories.

IN SLEEP

Richard Burton

Not drowsihood and dreams and mere idless,
Nor yet the blessedness of strength regained,
Alone are in what men call sleep. The past,
My unsuspected soul, my parents' voice,
The generations of my forbears, yea,
The very will of God himself are there
And potent-working: so that many a doubt
Is wiped away at daylight, many a soil
Washed cleanlier, many a puzzle riddled plain.
Strong, silent forces push my puny self
Towards unguessed issues, and the waking man
Rises a Greatheart where a Slave lay down.

Richard Burton (1861-1940) was a poet, educator, and lecturer. He was literary editor of the Hartford "Courant" in the 1890s, and later taught English literature at the University of Minnesota and Rollins College.

INSOMNIA

Insomnia

Francis Robert St Clair Erskine, Earl of Rosslyn

Sonnets and Poems by the Earl of Rossyln. London: Remington & Co., 1889.

Through all the weary night I lay,
It seemed a century or more,
A ship that struggled for the shore,
Yet came no nearer than the bay.

For hours and hours I fondly gazed
Athwart the Eastern window-pane;
For hours and hours I looked in vain
To where the great Aurora blazed.

I faint with longing for the morn,
Oh! leaden hours that creep and creep;
Oh! cruel thoughts that murder sleep,
And shake my faith and rouse my scorn.

Haste on your Pilgrimage of Woe,
And waste your spite on me no more;
I see the chink beneath the door
Begins to glimmer and to glow.

Oh! welcome light to sleepless eyes,
The first pale glint of yellow day,

That peeps with hesitating ray,
And fills me with a chill surprise.

The restless limbs, the weary head,
May seek the solace of the sun,
May walk, may climb, may leap, may run,
Untrammelled by their hated bed.

I hear the jalousies thrown back,
The muffled sound— the tremulous tread —
And, like one listening from the dead,
I hear the polished parquet crack.

And up I spring with might and main,
And cast the cerements all aside,
The pillows falling far and wide ;
And now I am alive again.

SLEEP

The Dublin Penny Journal. Feb. 15, 1834. Vol. 2, No. 85. Page 264.

One hour asleep is worth ten awake,
If fancy our rule and measure we make;
For what vessel of steam
Can scour like a dream—
In one nap a ten days' trip we can take.

And then, what engine can match the might
Of the spirit that comes in the watches of night,
To break our bars,
And tight our wars?—
And yet her pinions are as soft as the light.

Oh! come with me to the dungeon tower
At the solemn neon of night's darkest hour
There gaze awhile
On the captive's smile,
And scorn the faint effort of mortal power.

Or view the exile whom sleep truth bear
Over hill and plain to his valley dear;
How free, how fair,
Is his tranquil air
As he lists the sweet carols he loved when there.

What muse inspires you Burgher's strain
His nocturnal pipe doth he tune in vain?
Oh, no! soup, stew,
Fricassee, and ragout,
All steam in his noddle and fatten his brain.

A board whose whiteness shames the snows,
By slumber's spell before him arose,
And the querulous gobble
Of turkeys in trouble,
Awake the loud Poeans that burst from his nose.

You dozing dandy whose captive waist
Is released at last from the tightened vest;
Could lie sell his thought,
'Twould be cheaply bought
By the rich contents of yon Burgher's chest.

Sweet slumbering Belle what dreamst thou about?
Beaux, and all that kind of thing, no doubt;
In a chariot and pair
Rejoiceth the fair,
And away she goes to my lady's rout.

He of the visage wan and pale,
What visions athwart his fancy steal?
They are so abstruse,
That my sportive muse,
Would shudder if challenged those dreams to reveal.

And where is the soul of that withered flower,
The victim of love's capricious power?
She is now at rest
In her mossy nest,
Ere yet the despoiler had rifled her bower.

Whate'er you desire in each varied mood
A houseful of gold or a mouthful of food;
To bed, to bed!

With your wish in your head,
And I warrant you'll get it or something as good.

For the wishing cap and its grammarie
Was nothing else but a *bonnet de nuit*.
With night-cap and pillow,
Despite land or billow,
We may do what we please, and be happy and free.

SLEEP

Mrs. R. S. Nichols

The Cosmopolitan Art Journal. December 1859. Vol. 3, No. 5. Page 205.

I said to Sleep,
That dreamy-lidded seraph of delight,
Stealing from caves
Where muffled darkness laves
The haunted shores of night—
Come, thou, and let us keep
The silences together;—on thy breast
This weary heart would rest,
The world's corroding cares forgetting quite.

Thy balmy breath,
Shall bathe each sense in slumber—as the dew
Falling on flowers,
Through all the curtained hours
Lends them a fresher hue,
And holds them back from death—
So thy harmonious dreams shall rain on me
In floods of melody,
Till all the springs of life shall gush anew.

Bear me away
To that mist-curtained and enchanted land,
Where all the isles
Are dimpled deep with smiles
Of rippling verdure, fanned

By spicy gales the day,
Where stars illumine the blue concave skies,
As love-enkindled eyes
The face of beauty, by Jehovah planned.

There, in the bowers
Thick-lined with moss, and twinkling starry blooms,
O'erarched with leaves,
The arrowy sunlight cleaves,
Gilding the emerald glooms,
Couched on the dew-lipped flowers,
Let me lie, listening to the breezy chimes
Among the glistening limes,
While yawning night the heavenly day entombs.

Snatch me from Earth!
Shut out all sights of horror, Guilt's quick pains,
The sufferer's cries,
Oppression's monstrous lies!
Wherewith it gilds its chains;
The home defiled—the hearth,
Where innocence and love united dwelt,
And low-voiced prayer knelt,
Till slid the serpent in those fair domains.

All evil things
That crawl and trail their slime along the leaves
And blooms of life—
The scorns, the hates, the strife
For power, the mildewed sheaves,
Unwholesome contact,—stings
That hide their venom 'neath a mocking smile,

Distilling death the while,
Like poisonous vapors on the starry eves.

The day is long—
How long, O God! when Ignorance and Sin
In its fair light
Plan deeds of darkest night—
When vice and folly win
The plaudits of the throng,
While lowly worth and virtue shrink aside
From bloated, boastful Pride,
Who paves the stony way for human wrong!

The day is long!
When blush its roses in the orient skies,
The world awakes!
And as the morning breaks,
Thousands of tearful eyes,
That weep misfortune's wrong,
Lift up their piteous orbs to Heaven above,
Despairing of His love,
Who notes the humble sparrow when it dies.

Then, from narrow street
And dingy alley—from the deepened walls
Of loathsome dens
Fouler than green-webbed fens
The human earth-worm crawls!
Dragging his listless feet
Through the broad thoroughfares of blazing day,
His palm outstretched alway
For pity's scanty mite that coldly falls.

For all who earn
By sweat and pain, their wretched crust of bread
The day is long!
Labor unto the strong,
The well, the clad, the fed,
Is blessed—the weak and worn
Shrink from the toil; their miseries no name
Allied to grief and shame,
Could half express the height, and depth, and dread

Deal kindly, sleep
With these forsaken ones—dry up their tears,
Let sweet repose
Lap them from hungry woes
Which feed on their young years!
Through thy dear watches keep
The grim, devouring phantom from thy breast,
That all the tides of rest
May flow in lulling calmness o'er their fears.

Rebecca S. Nichols (1819-1903) was an American writer known for her prose and poetry. Born in New Jersey, she moved to the West and married in Louisville, Kentucky. Nichols' literary activity spanned 16 years from 1839 to 1855. In 1851, a large volume of Nichols's later poems were published under the title *Songs of the Heart and of the Hearth-Stone*. Her poems were widely circulated in book collections and newspapers, and many were set to music.

SERENADE

Mary Weston Fordham

Magnolia Leaves. Tuskegee, Alabama. 1897. p. 73-74.

Sleep, love sleep,
The night winds sigh,
In soft lullaby.
The Lark is at rest
With the dew on her breast.
So close those dear eyes,
That borrowed their hue
From the heavens so blue,
Sleep, love sleep.
Sleep, love sleep,
The pale moon looks down
On the valleys around,
The Glow Moth is flying,
The South wind is sighing,
And I am low lying,
With lute deftly strung,
To pour out my song,
Sleep, love sleep.

Mary Weston Fordham (1843?-1905) was an African American poet and teacher from Charleston, South Carolina. During the Civil War she ran a school for African American children, and later worked as a teacher for the American Missionary Association. "Serenade" is one of 66 poems in her 1897 collection *Magnolia Leaves*, which had an introduction written by Booker T. Washington.

ABOUT THE MUSEUM OF SLEEP

The Museum of Sleep explores the history, science, art, and culture of sleep through interdisciplinary exhibits and programs for people of all ages. We aim to inspire curiosity and wonder about this universal human experience.