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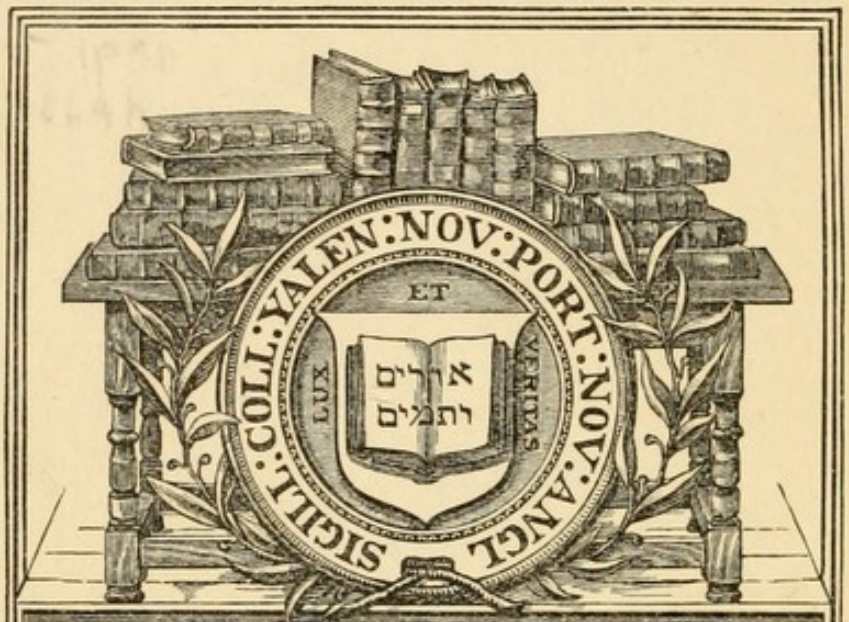

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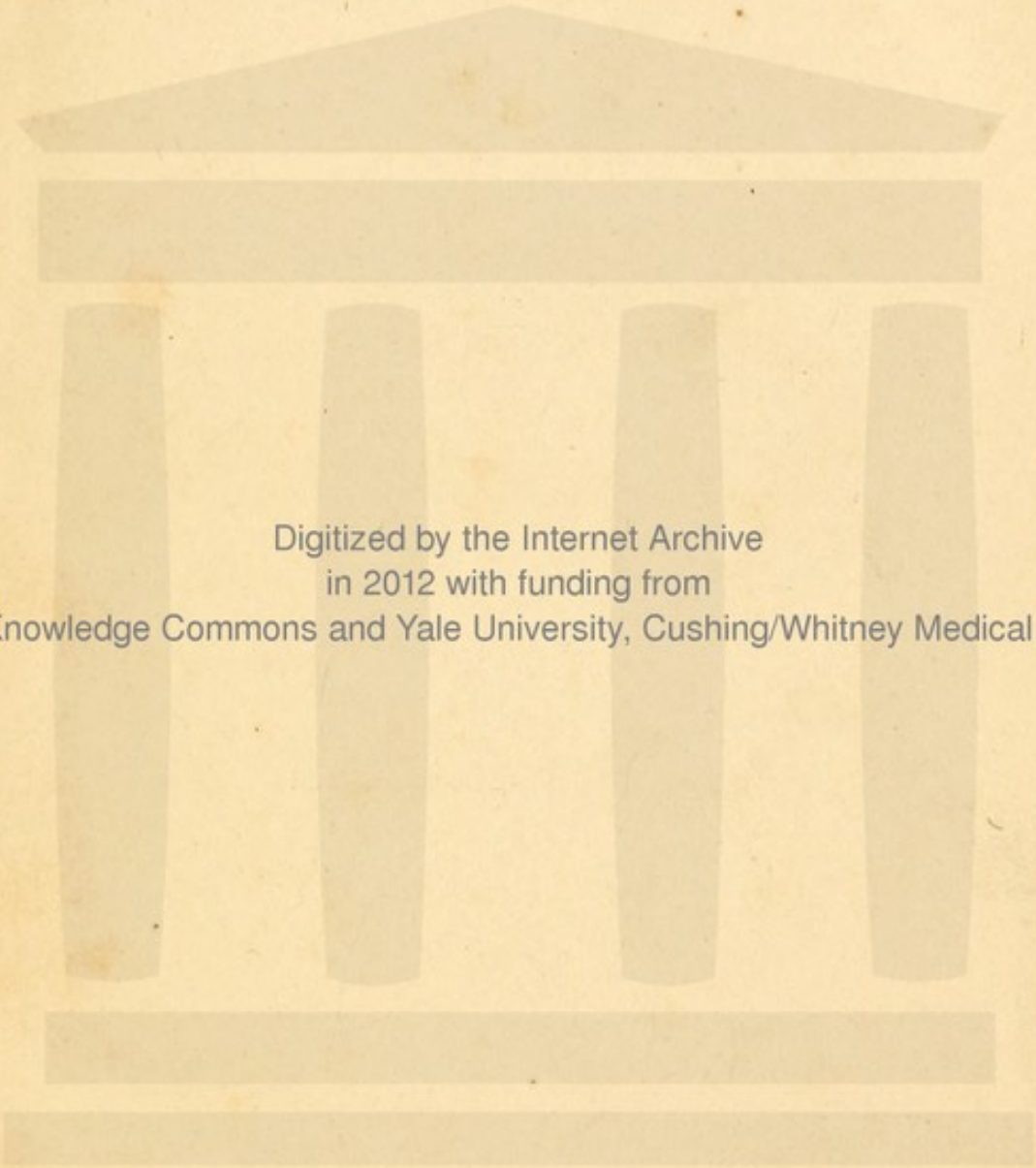

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SLEEP.

BY

DR. W. W. HALL,

EDITOR OF HALL'S JOURNAL OF HEALTH, AND AUTHOR OF "BRONCHITIS AND KINDRED DISEASES," "CONSUMPTION," "HEALTH AND DISEASE," "SOLDIER HEALTH," "HEALTH TRACTS," ETC.

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PREFACE.

It is the aim and end of this Book to show that as a means of high health, good blood, and a strong mind to old and young, sick or well, each one should have a single bed in a large, clean, light room, so as to pass all the hours of sleep in a pure fresh air, and that those who fail in this, will in the end fail in health and strength of limb and brain, and will die while yet their days are not all told.

New-York, October 23.

SLEEP.

SLEEPING WITH THE OLD.

On a beautiful September morning in the year eighteen hundred and fifty-nine, a note was found on the author's table in a hand-writing which was immediately recognized as that of a wife and mother of high culture, in behalf of a young sister, whom she had hoped would have grown up as healthful, as beautiful, and as accomplished as herself; but the lovely blossom seemed to be fading in its unfolding, and the communication was a history of the case, intended to give the physician an idea of its nature and its needs.

"Baby Bell, as we all grew up to call her, might have been an exquisite model for a baby Hebe; so rounded, so rosy, so full of vivacity and health! As I recall her childish form now, after the lapse of years, I can imagine nothing more beautiful in mortal shape. Her fair head was covered with sunny curls which dropped upon white and dimpled shoulders. She was of the Saxon type, her eyes of the most limpid blue, 'roses were her cheeks, and a rose her mouth.' Until six years old, she retained all her health and beauty, when her system began slowly to undergo a change. Her limbs lost their roundness, her cheek its dainty bloom. Was it not strange? She seemed well; but as the next six years wore on, each succeeding day stole something of her vitality, which changed the once ruddy and healthful child into a puny, pallid, nervous girl. Yet she had no constitutional ailment; no hereditary disease ever developed itself. She never had a serious illness, and yet she was always ailing. She was troubled with nervous headaches, so unnatural to a child, whose perfect organism should have made her unconscious of the possession of nerves.

"She was my little sister, my darling little sister. I saw her at intervals during the lapse of six or seven years, and was always troubled by the unagreeable changes which each succeeding year wrought in her person. Those who were in the habit of seeing her daily, laughed at my expressed fears that her health was declining; they said: 'She was growing, that was all.' Growing! Yes! but so slowly, that at twelve years she was not taller than the generality of children at ten, and not so broad across the chest as an ordinary child at five; and her little puny arms, how slender they were; the skin on her temples was transparent. Growing! Yes! other children were 'growing' and developing likewise. Chubby faces and limbs are characteristic of childhood. Slender and delicate forms in children are untrue to nature, therefore there must be a cause for them. The constant exercise and generous appetite of a child should secure to it well-developed mus cles and an abundance of pure blood. When, therefore, the venous fluid seems through the skin to be no more than mere lymph, and the limbs evince no muscle at all, there must

be a cause, and ought to be a remedy. "What is it?"

Special inquiry elicited the fact, that at the close of the fifth year, this promising child became possessed with the idea that she must sleep with an aged relative, and in failing health. Her whim was gratified. Time passed imperceptibly. The practice had become a habit which parental indulgence had not the firmness to break up. All suggestions that the evident failing in health and vigor and comeliness in the once beautiful child, was the result of sleeping in the same bed with an old person, who was evidently now sinking into the grave with an incurable disease, or rather a complication of ails, were regarded with indifference, and the child pined and withered away like a flower without water.

Authentic history records the following mournful narration:

"Lord Clive, while a colonel in the British Army, commenced his career as founder of the British empire in India. Full of honors and wealth, he returned to England; but being defeated in getting into Parliament, in seventeen hundred and fifty-five, sailed again under the King's command for India, the Company appointing him to the governorship of Port St. David. But the very day he stepped into the gubernatorial chair at Madras, the Bengal Nabob took Calcutta. Then came that chapter of unheard of cruelty, familiar to every child who has learned to read his story-books. The tragedy of the Black Hole occurred in seventeen hundred and fifty-six. The dungeon was twenty feet square. The little garrison thought it all a joke when they were ordered to go in: but to refuse was to die, for Surajahul Dowlak's orders must be obeyed; prolonged suffering was better than instant death; they entered! one hundred and thirty-six in all. The door was closed, the small aperture admitted neither light nor air. When they began to exchange breaths the startling truth burst upon them. The air already was almost putrid· they shrieked, they yelled in

mortal agony; they screamed for water, and then killed each other over the cup which was passed through the grating. While the poor prisoners were biting and squeezing each other's life away, gasping for air, for water, for any thing that would relieve them of their agony, the jailers laughed and danced in pure delight. Holmeil, the highest in rank, offered the jailer heavy bribes; but no, the Nabob was sleeping, and no one dared to wake him. In the morning, when the debauch was slept away, he ordered the dungeon-door to be opened, and out staggered twenty-three swollen, distorted living corpses! One hundred and twenty-three were piled up, a putrefying mass of men; all shapes and forms were represented in the death-struggle. The English woman who survived was sent to the harem of the Prince of Moorshebadad. Holmeil was saved and tells the tale. The dead were burned on the spot, but the harrowing picture did not move in the least the granite disposition of the human tiger. The horrible deed reached Clive, and the celebrated battle of Plassey showed the inhuman Nabob that it was a foollhardy thing to trifle with the feelings of

Englishmen. The soldiers fought like bull-dogs; revenge stimulated them, and the Nabob's army of sixty thousand strong was broken like a reed. Clive lost but twenty-two men."

At about four o'clock in the afternoon of Friday, in the latter part of August, eighteen hundred and sixty, the following distressing occurrence took place in Federal street, Allegheny City, Pennsylvania:

"Alfred Bottles, William his brother, and James Vance, were engaged in digging a well in the rear of the beer-hall of Herman Hendal, corner of Federal street and Center alley, on a lot owned by John Chislett, Esq., of the Allegheny Cemetery, from whom Hendal had leased. The object was to drain a privy-vault, and the well was dug thirteen feet deep close to the vault. Alfred Bottles, after four o'clock, descended into the well by a ladder, and made a hole in the vault, six feet from the ground, to drain off the contents. When he thought the hole was through, he stooped to look, when the foul air in the vault came out, suffocated him, and

he fell from the ladder to the bottom of the well, where the filth poured down upon him. Vance, seeing him fall, waited a few moments and followed him, but was also overcome by the foul gas, and fell to the bottom. William Bottles next went down to the assistance of the others, and shared the same fate. By this time there was a foot or more of liquid in the well, and those undermost, Alfred Bottles and Vance, were partially covered with it. At this juncture, John Taggart, gardener for Mr. Wilson, at Shousetown lane, who was in a store on Federal street receiving pay for some articles he had sold, heard of the accident and hastening to the spot, jumped into the well, to save, if possible, the lives of the three sufferers. Wm. Bottles had then been in the well some five minutes. Mr. Taggart was overcome, in like manner with the rest, by the gas, and fell over Wm. Bottles, forcing his head partially under the fluid in the well.

"The bystanders were paralyzed, and nearly all were afraid to give any assistance. But a young German, named William Brown, about twenty-five years of age, fearless of the consequences, volunteered to go down. A rope

was fastened around his waist and with another in his hand, he was let down in the well, and fastening a rope around the body of Taggart, he was drawn up. Brown descended a second, third and fourth time, and thus the four bodies were brought to the surface. Alfred Bottles and James Vance were dead when taken out, and Taggart expired soon after being carried in a house adjacent. William Bottles was taken to his residence and recovered."

In the early part of the year eighteen hundred and fifty-seven, the inmates of the National Hotel in Washington City, the capital of the United States of America, were filled with consternation at the fact that several of their number were taken ill, in and about the same time. Reports were immediately circulated, that the symptoms were uniform and were those which ordinarily attend arsenical poison, to wit, severe griping pains, uncontrollable diarrhea, inward "burning" sensations, and the like. Persons were attacked under a great

variety of circumstances. Some were habitues of the Hotel; others ate there, but slept elsewhere. Some neither ate nor slept there, but passed several hours of each day in the rooms on the ground-floor. Some were attacked who had slept there but a single night. A traveler ate a single dinner, and came near dying. Some persons died in a few days, others lingered for months and then died. Some lingered for years without recovering their wonted energy of mind and vigor of body. Some went to Europe in the hope of wearing the poison out of their systems, and returned the next year with but little of the desired improvement. Some of the first physicians in the country gave their convictions in the public presses, that there could be no remaining doubt that all was the result of some mineral poison, in some way introduced into the food. But two simple facts were testified to on an official investigation, and of their truth there was not the shadow of a doubt,

and could not be denied. Persons were attacked who never ate an atom or drank a drop on the premises. Second, not a single case occurred in any family living across the streets which bounded the Hotel, and where none of the members of which had visited the building. A third fact needed no proof, that persons, especially some of the ladies who had been living at the Hotel for weeks, and occupied rooms in it during the time, were not affected at all, and yet they came down to the common table day after day.

On official inquiry, it was ascertained by ocular demonstration, that a large sewer of the city opened into the cellar of the Hotel, and also, that the privies under the same roof were in an ill condition, one of them being so full, that when a person stepped on the floor of it, the matter beneath spirted up between the joinings of the boards.

During the summer of eighteen hundred and sixty, a gentleman was traveling in

Italy. As he left Rome, he was warned of the danger of sleeping at Baccano. He was told to travel all night rather than stop at that place, as a malignant fever prevailed there.

He arrived there about bed-time. The air was balmy, and the accommodations inviting. He concluded to stop for the night. Those whose interests would be promoted by his doing so, told him there was no danger.

He rose in the morning and proceeded on his journey. Some days after he had reached Florence the fever developed itself, and he was soon in his grave.

Last summer, Signor Ardisson, now of Baltimore, an exiled Roman patriot of high culture, while on a visit to his friend, Robert Earle, Esq., who dispenses the freest hospitalities to the travelled and the cultivated, at the beautiful Chateaux Elm Hurst, on the banks of the Hudson, almost in sight of classic Sunnyside and Idlewild, informed the author, on inquiries made, that always, when hunting in the Pontine marshes, it was well understood by himself and

companions, that it was necessary to avoid hunger during their excursions, and also to keep up a vigorous circulation, either by active exercise, or mental hilarity, such as by singing, shouting, and slapping one another on the shoulders. On one occasion, when there was a failure of these precautions, it was followed in his own person by a dangerous illness of several weeks' duration.

In the celebrated Grotta Del Cane, there is an apartment where a man may walk with impunity, and yet his dog following him will fall down dead, and if the master lies on the floor, he too will die, showing the existence of a poisonous air near the floor.

The argument of this book is founded on the narrations which have been given. Volumes of similar ones, well authenticated, might be easily collected, going to show that breathing an impure air for various durations, will occasion states of ill-health of all grades, from an almost imperceptible decline, to symptoms

which have the malignity of the most virulent and speedily fatal poisons.

It needs no caution, generally, to keep persons from breathing an atmosphere which will produce certain death in a few hours or minutes even. But the most earnest and irresistible arguments have failed thus far to impress upon the public mind the conviction of the certainly destructive influences upon human health which follow from too many persons sleeping in the same room, of several persons sleeping in the same bed, or of a single person sleeping habitually in a small apartment.

The plan of this book is to show the destructive influence on health and life which bad air exercises; to state a variety of the causes of deterioration, among which the most rapid in their effects are emanations from the human body, and the expirations from the lungs; and therefore, as we spend a third of our existence in sleep, during which, in con-

sequence of its passive condition, the corporeal system is greatly more liable to the influence of the causes of disease, it is of the utmost consequence that every practical and rational means for securing a pure air for the chamber should be employed, the most important of these being large rooms and single beds.

It is not only unwise, it is unnatural and degenerative, for one person to pass the night habitually in the same bed or room with another, whatever may be the age, sex, or relationship of the parties. Unwise, because it impairs the general health and undermines the constitution, by reason of the fact, that the atmosphere of any ordinary chamber occupied by more than one sleeper, is speedily vitiated, and that in this vitiated condition, it is breathed over and over again for the space of the eight hours usually passed in sleep, amounting, in the aggregate, to one third of a man's entire existence. Unnatural, because it is contrary

to our instincts; and it is lowering, because it diminishes that mutual consideration and respect which ought to prevail in social life. A person feels elevated in proportion to the deference received from another, and there springs up a self-restraint, a consciousness of personal dignity, which has an exalting effect on the whole physical, moral, and social nature of man; but the habitual occupation of the same chamber must largely detract from these in a variety of ways.

Without the argument of analogies, that the most spiteful, the vilest, and the filthiest of the animal kingdom—wolves, hogs, and vermin—huddle together, the physical aspects of the case will be considered in their bearings on human health. It is not denied that two persons have slept together in the same bed for half a century, and have lived in health to a good old age; this only proves how long some may live in spite of a single bad habit. Persons have lived quite as long in the habit-

ual indulgence in low, vicious, degrading, and drunken practices. It will be found, however, that in these cases there were counteracting causes in steady operation, such as open chambers, houses with a thousand cracks and crannies, and frequently during the time, the earth a pillow, a canopy the sky, with the additional fact that a large portion of every day was habitually spent in wholesome activities in the open air. To these considerations may be added the high advantage of a good constitution to begin with, and the necessity of a plain and primitive mode of life. Exceptional cases are not to be considered in a general argument.

It is proposed to show that the tendencies of certain social habits are uniformly pernicious, and that prejudicial results will follow as certainly as that water will fall over a precipice, if physical obstacles are not presented, such as that of its being frozen at the instant, diverted from its course, or caught in the beginning of its descent.

The general argument against sleeping with others, is found in the undeniable fact, that when several persons sleep in the same apartment, the fewer conveniences are there for personal cleanliness, which is at the very foundation of bodily health, of moral purity, and mental elevation.

There is another argument of an exceedingly wide range, and yet a mind of very limited culture can not fail to feel its force. As men improve in their condition, there is a strong desire for greater domestic conveniences and comforts; the very first of these is "more room;" and eventually, instead of several members of a family sleeping in the same bed, each child, as it grows up, has a separate apartment, and a rich man's dwelling has more than one room to each member of his household.

In former times, it was oftener the case than at present, that the married children would remain with their parents as a matter of economy, for several years; but now it is usually a

settled thing to secure a "home of their own" before the marriage ceremony; "going to housekeeping," is an event second only to the marriage itself, and is one of the surest indications of thrift.

On the other hand, as families herd together in the same building, there are found those brutal debasements which have made famous the "tenement-houses" of New-York, where as many as one hundred and twenty distinct families lived under the same roof, and where there were thirteen thousand six hundred and twenty-three houses which averaged nearly six families each, and thus three fourths of the population of the metropolis of the United States of North-America, lived in the year of grace one thousand eight hundred and fifty-nine, with the result of its being the sickliest of all the large cities of the civilized world; while Philadelphia, but eighty-six miles away, with hotter summers and sometimes colder winters, without that proximity to the sea, which is so fruitful

of sanitary blessings, is one of the healthiest cities in the Union. But Philadelphia has a house to every six persons, while New-York has but one to every thirteen. Such facts as these prove, on a large scale, that the more house-room a community has, the more healthful will that community be.

Another great fact is, that there are three times the number of deaths, in proportion to the population, in those parts of the city where the poorest, and consequently the most persons live together in the same house, as compared with the mortality where nearly every family lives in a dwelling of its own. For example, in the First Ward of the city of New-York, where almost all are poor, one person died out of every twenty-two, while in the Fifteenth Ward, where the inhabitants live mostly to themselves, in large, roomy buildings, only one died out of every seventy!

Further, in the sixteenth century, when the great majority of mankind lived in huts and

hovels, whole families eating, sleeping, and working in the same apartment, the average of human life was five years, according to the estimate of Marc d'Espine and others; but in the former half of the nineteenth century, that is, from eighteen hundred to eighteen hundred and forty, it had increased to forty-one years.

Nothing, perhaps, more accurately measures the thrift of any community than the greater number and size of its buildings, and the allowable inference is, that the more houses there are, in inverse proportion to the number of people, the further they sleep from one another, the larger the number of persons who have rooms to themselves, and the more capacious are their chambers.

The convulsions or "fits" of children usually occur at night, while sleeping; these, in most cases, arise from over-eating or breathing an impure air. Fifteen hundred and ninety-nine children under two years of age died in New-York City during eighteen hundred and fifty-

five, from this malady alone. While bad air causes these convulsions, immediate introduction to a pure atmosphere gives instantaneous and efficient relief.

The broad fact can not then be denied, that, as a general rule, and in the sense in question, the further people sleep apart, the more they occupy separate rooms, the greater are their chances of life. A more critical examination into the nature of things will show, in a most conclusive manner, the reason of such results.

Dr. Arnott reports that a canary hung up in a bed surrounded with closely-drawn curtains, and in which two persons slept, was found dead in the morning. This was because that, after the sleepers had breathed the air, there was not life enough left in it, not oxygen enough to feed a bird, and it perished. This shows in a general way, that when the breath comes out of the mouth, there is no substance in it, no nutriment, no life, and that we can no more live upon it than we could live upon food

after all its nourishment had been extracted from it, and it had become as innutrient as saw-dust, or as the driest husks of the field. Experimenters have ascertained that a breath of air is so wholly deprived of its substance, its life, while in the lungs, that if re-breathed without any admixture of the common air, it would cause death in a minute or two.

The lungs of an ordinary man hold some ten pints of air; but as they are never entirely emptied in life, they take in about six pints, or one gallon at a full breath.

In the breathing of repose, as in ordinary occupations, about one pint, or forty cubic inches, is taken in at a breath. A person breathes about eighteen times a minute during sleep, or two and a quarter hogsheads in one hour; or eighteen hogsheads during the eight hours which are usually given to sleep, or two hundred cubic feet; that is, in eight hours, every particle of nutriment would be abstracted from a room containing that amount

of air. To make it more tangible, if a person were put to sleep in a room six feet high, eight feet long, and a little over four feet broad, and no air was allowed to come in from without, all the life of the air would be consumed, and he would die at the expiration of the eighth hour, even if each breath given out could be kept to itself. But this would not be the case, for the very first breath of the first minute would, on passing out of the mouth, mingle with the air of the room, and taint and corrupt it, so that in reality, the first breath of air taken would be the only one that was pure, each succeeding one would be less and less so, and long before the eight hours had expired, the whole mass, although not entirely vitiated, would be so to such an extent that it could not possibly sustain life. All have observed the disagreeableness of the air of an ordinary-sized room, in which one or more persons have slept all night, when first entering it from a morning walk; and this, too, when the

various crevices about the doors and windows, and an open fire-place, allowed some fresh air to come in, and some of the foul air to escape. With this view of the case, physiologists advise that each person should sleep in a room equal to twelve feet square and eight or more feet high. The floor-surface of a room is measured by the length and breadth multiplied together. But ordinary chambers do not equal twelve by twelve; do not measure a hundred and forty-four square feet. Not one in a thousand hotel-chambers is as large; very few of the "state-rooms," so called, of ships and steamers, measure over seven feet long, seven feet high, and four broad, giving only two hundred and forty-five feet for two persons, which is barely enough to save one from inevitable death, if there were no crevices to admit the fresh air.

Since, therefore, each out-breathing vitiates the whole body of air in a close chamber, as a drop of ink will discolor a glass of water, it

should have a thorough ventilation; that is, a current of air should be passing through the room from without up through the open fireplace and chimney, carrying before it the bad air, leaving a fresher and a purer in its place.

But very few chambers in this country measure twelve feet square, and consequently are not large enough for one person, let alone two; and in proportion as the room is too small, in such proportion are the lungs and body and blood deprived of their essential food, as essential to life as water is to a fish; and in such proportion are sown the seeds of disease and premature death.

All know that a fish can not live an hour out of its natural element, water; nor can man live an hour out of his natural element, air, nor a quarter of an hour, and to both a fresh supply of these must come in as steadily as used, or harm will follow as inevitably as universal darkness would envelop the earth, if the sun were blotted from existence.

To show how a little taint of the atmosphere with a substance not natural to it will materially influence the animal economy, it is sufficient to state a fact of repeated observation, that a man who sleeps near a poppy-field with the wind blowing steadily towards him from the field, will die before the morning. Intelligent readers have often perused descriptions of the fatal effects of the dreadful Simoons which sweep over the African desert, leaving whole caravans of beasts and men dead from the instant contact with their scalding breath. Similar winds are also known in India. At a late meeting of the Meteorological Society of London, Dr. Cook remarked that there are certain days in which, however hard and violent the wind may blow, little or no dust accompanies it, while at other times every little puff of air or current of wind raises up and carries with it clouds of dust, and at these times the individual particles of sand appear to be in such an electrified condition, that they are even ready

to repel each other, and are consequently disturbed from their position and carried up into the air with the slightest current. To so great an extent does this sometimes exist, that the atmosphere is positively filled with dust, and when accompanied by a strong wind, nothing is visible at a few yards, and the sun at noonday is obscured. This condition of the atmosphere is evidently accumulative; it increases by degrees till the climax is reached, when, after a certain time, usually about twenty-four hours, the atmosphere is cleared, equanimity is restored. Dust-columns appear under a similar condition of electrical disturbance or intensity. On calm, quiet days, when hardly a breath of air is stirring, and the sun pours down his heating rays with full force, little circular eddies are seen to rise in the atmosphere near the surface of the ground. These increase in force and diameter, till a column is formed of great hight and diameter, which usually remains stationary for some time, and then sweeps away

across the country at great speed, and ultimately, losing the velocity of its circular movement, dissolves and disappears. Dr. Cook had seen in the valley of the Mingochav, which is only a few miles across, and surrounded by high hills, on a day when not a breath of air stirred, twenty of these columns. These seldom changed their places, or but slowly moved across the level tract, and they never interfered with each other.

The author then spoke of the Simoon, that deadly wind which occasionally visits the deserts of Cutchee and Upper Scinde, which is sudden and singularly fatal in its occurrence, invisible, intangible, and mysterious. Its nature, alike unknown, as far as the author is aware, to the wild, untutored inhabitants of the country which it frequents, as to the European man of science; its effects only are visible, its presence made manifest in the sudden extinction of life, whether of animal or vegetable, over which its influence has extended. Dr.

Cook gives the results of his information respecting the Simoon as follows:

1. It is sudden in its attack.

2. It is sometimes preceded by a cold current of air.

3. It occurs in the hot months — usually June and July.

4. It takes place by night as well as by day.

5. Its course is straight and defined.

6. Its passage leaves a narrow "knife-like" track.

7. It burns up or destroys the vitality of animal and vegetable existence in its path.

8. It is attended by a well-marked sulphurous odor.

9. It is described as being like the blast of a furnace, and the current of air in which it passes is evidently greatly heated.

10. It is not accompanied by dust, thunder, and lightning.

It is so generally known to be fatal to travelers to pass the night in the campagna in Italy,

that citizens uniformly caution strangers to pass directly through it. And nearer home it is known that it was considered almost certain death for those crossing the Isthmus of Panama to spend a night there, and sailors were threatened with severe punishment who did not return to their ships in the offing before the night came on.

Dr. E. Y. Robbins says of Professor Carpenter, the first physiologist of Great Britain, if not of the world, that, in his experiments, he "had ascertained that air containing five or six per cent of carbonic acid gas would produce immediate death, and that less than one half that quantity would soon prove fatal. Now, if effects are proportioned to their causes, and if an atmosphere impregnated with five per cent, or one twentieth part of its volume, of carbonic acid, will thus produce death in a few minutes, what must be the probable effect of breathing for twenty or forty years, even the much minuter proportions which must be

present in every inhabited room where there is not a constant ingress and egress of air? It must lower the standard of health and shorten the duration of life. But not only is the air in a close room thus constantly being impregnated with carbonic acid gas to the amount of about twenty-eight cubic inches per minute for each adult man occupying such room, but there is also, according to the best authorities, constantly being discharged by the lungs and pores of the skin an equal amount by weight, that is, about three or three and a half pounds in twenty-four hours, of effete, decaying animal substance, in the form of insensible vapor, which we often see condensed in drops upon the windows of crowded rooms and railroad cars. These drops, if collected and evaporated, leave a thick putrid mass of animal matter. The breathing of these exhalations is believed to be quite as efficient in producing disease as carbonic acid itself.

In the winter of eighteen hundred and sixty, in one small, ill-ventilated room in

a house at High Blantyre, Scotland, a man named Robertson, his wife, and three children were in the habit of sleeping. One morning the wife awoke about five o'clock in a very exhausted state, and found her infant child, aged nine months, lying dead in her arms. She immediately aroused her husband, who also felt in a weakly condition, but had strength enough to get out of bed. They then discovered that their next eldest child, a boy aged about three years, was also dead, and the third, a girl nine years old, apparently dying, but upon being removed into another apartment she eventually recovered.

Facts like these show that breathing a bad air for a single night is perilous to life. Few are so ignorant as not to have learned that if a handful of charcoal is lighted in a small, close room, death before the morning is an inevitable result, hence it is used sometimes as a means of self-destruction. The reason is, that charcoal in burning, subtracts the oxygen from

the whole body of the atmosphere, and this oxygen is its life, and is as fully used up in breathing as in the burning of charcoal. It is not actually destroyed in either case, but a new combination is formed called carbonic acid, which has no oxygen, no life, and a single breath of it induces instantaneous suffocation. It is this carbonic acid which taints a sleeper's chamber, and the taint increases at every out-breathing, for every expiration is loaded with it, and where two sleep in the same room the poisonous vitiation increases with a two-fold rapidity, and the unhealthful results are inevitable and ruinous. To impress these vital lessons on the mind, the philosophy of breathing or respiration, should be understood.

The object of breathing is to make a change in the condition of the blood, which is said in the sacred Scriptures, with philosophical accuracy, to be "the life of a man." It is sufficiently precise, for all practical purposes, to say that a man takes into the lungs in twenty-

four hours, about sixty hogsheads of air, as in health he breathes about eighteen times in a minute, on an average, for the twenty-four hours, and takes in about a pint or forty cubic inches at a breath. During the same time, there passes through the lungs an amount of blood equal to twenty-four hogsheads; with this blood, the sixty hogsheads of air come in virtual contact, and a great change takes place in both the blood and the air; for the oxygen, the life of the air, is taken from it as such, and becomes, in a measure, incorporated with the blood so as to give life to it; at the same time, the impurities of the blood are taken up by the breath of air just taken into the lungs, so that when expired, when passed out of the lungs, it is so loaded with these impurities, that it is utterly unfit for being breathed again; so much so, that as has been already stated, if re-breathed, without the admixture of some fresh air, it would cause an instantaneous destruction of life, from its entire destitution of

nutritious particles. Each breath of air then, in healthful respiration, goes into the lungs perfectly pure, but comes out, loaded with the impurities of the blood, and thus the blood is purified, made fit to be re-distributed over the body, to impart life, renovation and growth. It is easy to see then, that if the air which is breathed is not pure, it fails to unload the blood of its impurities, and hence it is unfit for the purposes of life; for to purify the blood, is to give health to the whole system; and when it is not purified, disease and pain and ultimate death are the inevitable results. This, then, is the great physical evil of sleeping together, the air is rapidly contaminated by two sleepers in any ordinary room; this contamination begins at once to lay the foundation for disease, and that result is inevitable in the very nature of things. Such result, however, does not become very marked in a short time, as there are counteracting agencies, such as the fact that there are crevices in the

doors and windows, and through these some fresh air is constantly passing; small, it is true, yet enough to keep the body alive; but how more dead than alive many a one feels without any suspicion of the cause, in that exceedingly languid sensation which sometimes pervades the whole body on first waking up in the morning; a little greater depriva tion, and the sleepers would have waked no more! In the case of the already narrated tragedy of the Black Hole of Calcutta, it may be well to state, that "It was eight o'clock in the morning, when the unfortunate prisoners were locked up, and in less than three hours, fifty of them had ceased to exist. The sur vivors of the next morning were said to be the ghastliest forms that were ever seen alive. But for two small windows for approach to which, there was through the night a frantic struggle, not one would have lived to tell the fearful tale."

Another more recent incident of Indian

history, is given to illustrate the pernicious influence of a deficient supply of fresh air, although not to the degree of causing instant death. When Sir Charles Napier was the Commander-in-Chief of the Indian army, the hill-stations of Sabathor and Kussowlie, which ought, from their position, to have been most healthy, were in disgrace, and denounced as pestilential. Sir Charles resolved to ascertain the cause of the mischief, and had no difficulty in accounting for the pestilence which had destroyed so many lives.

The barrack-rooms were only eight feet high and had been crammed full of soldiers. "I altered the barracks," said Sir Charles, "and put half the number of men in them, and they became at once the most healthy in India. When I last saw my own regiment with which I made the experiment, in conjunction with the 'Sixtieth Rifles,' both having been nearly decimated by fever, the twenty-second had but nineteen in hospitals, out

of one thousand and fifty, in the sick season, and the sixtieth about the same."

In the times of Pope and Swift, the Augustan age of England, a little over a century ago, "debtors and pirates were confined together in the Marshalsea. Thirty, forty, and even fifty prisoners were locked up at night in a single room, not sixteen feet square and eight feet high. For a whole year, there were sometimes forty, never less than thirty-two, persons locked up in George's ward every night, which is a room sixteen by fourteen feet, and about eight feet high. The surface floor was not sufficient to contain that number when laid down, so that one half were hung up in hammocks, while the others remained on the floor under them. The air was so wasted by the number of persons who breathed in that narrow compass, that it was not sufficient to keep them from stifling, several having, in the heat of summer, perished for want of air. The more offensive part of

the account is omitted, but it may be found entire in the state papers of England."

John Howard, of immortal memory, found that there were dungeons in Cornwall, measuring seven and a half feet long, six and a half deep, and five feet broad, in which "two or three persons were chained together. Their provision was put down to them through a hole in the floor of the room above, and the foulness of the air coming up through that hole was such, that those who thus served the food often caught the fatal fever, and the keeper and his wife died in one night."

Other dungeons containing about four hundred cubic feet of air, measuring seven and a half feet long, by six and a half broad, and eight and a half high, had only a hole of four inches by eight, over the door, the only avenue of air to the interior, and even that coming through long, dark passages reeking with dampness and filth and slime. "Yet, in each of these dungeons, three human beings

were commonly locked up for the night, which, in winter, lasted fourteen or sixteen hours."

In Chester there were cells measuring nine feet by three, and seven and a half feet high, with a single aperture of four inches by eight. In each of these, three or four felons were locked up every night.

In the Chink of Plymouth jail, there was a "diabolical dungeon," eight feet by seventeen, and only five and a half feet high, with a wicket in the door seven inches by five. Yet Howard learned with horror, that three men had been confined in this dungeon for two months. "They could neither see nor breathe freely, nor could they stand upright. To keep alive at all they were forced to crouch, each in his turn, at the wicket, to catch a few inspirations of air, otherwise, they must have died of suffocation, for the door had not been opened in five weeks."

No wonder is it, that with such arrangements, the jail-fever raged throughout Eng-

land, slaying tens of thousands in its fury, spreading its terrible contagions in such a deadly manner, that the prison-physicians would not engage their services in some cases, without the express understanding, that they should not be required to visit persons who had the jail-fever.

These cases show that a certain amount of fresh air is necessary to life, and that if that amount is largely curtailed, fearful diseases and speedy death ensue. If there is but a moderate diminution, as in sleeping together in small rooms, the consequences are not instantly fatal, but the life of the system is slowly undermined, predisposing it to wasting disease.

But why need the dark and dismal dungeons of England, a hundred years ago, be cited for proof? On the fifth day of October, eighteen hundred and sixty, Judge Pierrepont, of the Superior Court of the city of New-York, resigned his seat on the bench, which, by his

ability he had ornamented so long, on the ground that the court-rooms were "ruinous to health and dangerous to life," and during the same week a correspondent of the New-York *World*, having visited Randall's Island where there are about eight hundred idiotic children maintained by public charity, says:

"'In a single room, perhaps eighteen by twenty-eight feet in area, I found thirty-seven imbecile children seated closely together upon benches and chairs arranged around the room —some rocking themselves incessantly to and fro, some screaming at the top of their voices, some yelling out a laugh, itself the token of a vacant mind, others moaned and muttered, or emitted an unearthly noise, intended for music. Here they chattered and quarreled, and grinned their ghastly smiles, seemingly under little restraint other than might be needed to keep them glued to one spot.'"

It is further stated that, "this room also is unclean and noisome; the floor reeks with a nauseating stench; the air is loathsomely putrid, poisoning the 'breath of life,' which the

inmates take impure, only to give back impurer; scrofulous sores saturate their clothing by their purulent issues. What a horrible picture this is! What a fearful condition these helpless and miserable children are now in! How long is it to be protracted? How long shall they be permitted to suffer, languish, and die, when it is possible to make most of them useful persons in society, and to afford relief to all of them, at least? How long shall a gentleman—James B. Richards—who has made the treatment of imbeciles a specialty, with the utmost success, beg the Commissioners to give him a chance to redeem these wretched and most unfortunate children, without expense as regards his time and labor? For the sake of our character as a Christian people, whose welcome duties are philanthropy and active benevolence, as well as for the sake of the suffering children, it is to be hoped that the reform is not far off—that the beneficent agencies may soon be put in operation that shall consummate this humane work."

Breathing a bad air for a very few days may introduce a poison into the system which shall

so impregnate it that no amount of subsequent exposure to a pure atmosphere will avail to arrest its malignant and fatal influences, although months and years have passed away since the occurrence of the infection. On Friday, June twenty-four, eighteen hundred and fifty-nine, the telegraph announced that the "Hon. D. F. Robison, ex-member of Congress died from a disease contracted at the National Hotel in the spring of eighteen hundred and fifty-seven." The circumstances connected with this affair have already been detailed, among which it may be important to repeat, it appeared in evidence that persons who slept in the hotel a single night were attacked so seriously that their lives for a time seemed to be endangered.

It has now been shown that a single sleeper requires a chamber twelve feet square, and well ventilated by having currents of air constantly passing from the crevices, about the doors and

windows, up through the fire-place and chimney, carrying with it the foul, exhausted air. But a majority of sleeping-rooms do not have a length and breadth which, when multiplied into each other, will give a superfices of a hundred and forty-four square feet, and yet not one, but the father and mother, and for a long period of married life, a child also, sleep in such room; and more, all three in the same bed, to say nothing of the space occupied by the furniture and clothing hanging around, nor of the sources of contamination of the air of the apartment, such as the toilet apparatus, wash-water, and other standing fluids. Under these circumstances, it seems to be little short of a murderous process for more than one person to sleep in a chamber of ordinary size. But when it is remembered that two and three and even more persons often sleep habitually in rooms less than twelve feet square, and when we take into account the harrowing details of the Black Hole of Calcutta, it must be ad-

mitted that sleeping together as a habit, is a sufficient cause for a gradual diminution of bodily vigor, a gradual undermining of the constitution, and an inevitable cause of premature decline and death to multitudes.

If ordinary chambers are but equal to twelve feet square, and that is barely enough for one sleeper, and it is the common custom for two at least to occupy such a room, we have the general fact of a world of people voluntarily allotting to themselves just one half of the requisite amount of air during every night of their existence, by which their blood is just half purified, their systems just half washed out, just half renovated! No wonder then that there is that earnest craving for more sleep in the morning on the part of the frail and feeble, and of those who violate the laws of their being, in the manner pointed out.

This is not all. If two married persons give themselves but half the needed amount of air for eight hours, and during those eight hours

and at the close of them, as is most generally the case perhaps, a new being is made, it is inevitable that it will be made in weakness, in imperfection, in incompleteness; hence is born deteriorated, with a hereditary susceptibility to disease, and with an incompetency to resist the ordinary causes of human ailments. Thus it is that the children of large cities, especially in summer time, when the entire air has so much less nutriment in it than is normal, are swept away as if by a pestilence; a pestilence more terrible than any epidemical cholera that ever visited our shores; and yet it creates no alarm, seldom a remark!

According to Inspector Morton's returns for eighteen hundred and fifty-five, there died in New-York City during July and August, under five years of age, three thousand seven hundred and two children; more than the total number of deaths from cholera during the preceding year; more than died of the first cholera of eighteen hundred and thirty-two! These

figures are found in the exceedingly valuable "Table of the Mortality of the City of New-York for the fifty-two years, comprising the full period from January the first, eighteen hundred and four, to December the first, eighteen hundred and fifty-five, inclusive."

Total cholera deaths in New-York City for	1832	3513
" " "	1849	5071
" " "	1854	2509
" deaths of children alone during July and August	1855	3702

Many are now living who have a vivid remembrance of the terror pervading all hearts during the prevalence of the first cholera, and yet when a greater number of children die during two months of any summer, it is passed without special remark. This is because in part we have become used to it; and in part because the greatest mortality is among the crowded poor, whose wailings rise not up to the ears of the great world above them. It is

not claimed that this fearful annual mortality among children under five years of age is wholly owing to the fact of too many persons sleeping together in the same room or bed; but that, under all the circumstances of the case, as presented, this great sacrifice of life is attributable, in considerable part, to the habit alluded to, there can be not a shadow of a doubt in any reflecting mind.

Let it be remembered that there is a double agency at work in this regard. The children are not only begotten in weakness, in want of vitality and vigor, but the causes of this are still in operation as to themselves; for very generally the infant sleeps in the same bed with the parents, and if a bird actually dies in a night under the circumstances already detailed, it is no wonder that the bird-like life of a tender infant is gradually sapped away by the same causes kept in operation every night for weeks and months and years; for it is not sooner than five years that children

in poorer families—and they are the majority —are put in other rooms than those in which the parents sleep; but after five years, the mortality of children diminishes fifty per cent.

Our calculations have been made on the purity of the air in the twelve-feet chambers, yet the causes of rapid vitiation of that atmosphere are numerous. There are liquids of various kinds in every chamber, besides the soap for washing, which is constantly sending out its emanations; and there are damp towels and bedding, combs and brushes, and the clothing worn during the day, which, as to some persons, is alone sufficient to taint the air of a whole room in five minutes after it is laid off. Besides these, if inner doors are left open during the night, emanations from close cellars and warm kitchens, and slops of various kinds, are constantly ascending, especially during sleeping-hours; for then the outer doors and windows are closed, no air is in circulation to carry them outside the build-

ing; hence they rise, by their own laws, to taint and corrupt the atmosphere of the sleeper's apartment.

Then again, there are found in most chambers, hung-up clothing, closets, wardrobes, drawers, and the like, with the carpeting, all of which are sources of dust and lint, and dampness and close air, so that, taking every thing into consideration, it is an almost unknown thing that any sleeper within the four walls of any private house or hotel, gets one single breath of real pure air in a whole night.

In the third volume of *Hall's Journal of Health*, page one hundred and forty-nine, the following statements are made, founded on carefully conducted experiments in one of the best-kept European hospitals:

"If a small portion of the air of a crowded room is made to pass up through distilled water, a sediment is left which contains various colored fibers of clothing, portions of hair, wool, bits of human skin or scales, and a fungus growth,

with its particles of reproduction, which adhere wherever they strike, or fall on wet surfaces or bruises, or sore places, and grow wherever they adhere; there is also a small amount of inde structible sand and dirt, with great numbers of the forms of animal life.

"But if that room be emptied for a few hours, and a portion of its atmosphere be treated in the same way, nothing will be found but a little sand and dirt, a few fibers of woven cotton, and only a trace of fungus; but no animal life, no bits of skin or hair, or scales of dead human matter.

"If five times the amount of neighboring outdoor air undergoes the same process, a single fiber of wool or cotton is now and then found, with a few specimens of fungus, and their atoms of reproduction, but no traces of decayed animal matter, nor are there any signs of organic life: thus showing that in our close apartments we are surrounded with organic living bodies, and that animal matter, living, dead, and decayed, loads the atmosphere which we breathe in the chambers of our dwellings and crowded rooms, and that these corrupting particles are swallowed into the stomach, and are breathed

into the lungs every moment of in-door existence, thus strongly urging us, by all our love of pure blood and high health, to hurry from our chambers at the earliest moment in the morning, and to consider every hour of out-door breathing a gain of life.

"No wonder is it that the blood is soon tainted and corrupted, by making sitting-apartments of our chambers, by spending hours in crowded assemblies, or stage-coaches, or rail-cars, where every breath we draw is a mouthful of monster-life, or of decaying or foreign substances."

But with all our precautions, foreign substances are floating in the air every where. Dust falls on the tops of the highest mountains, and drops on the decks of vessels many leagues beyond the shore. Under the head of *Micographie Atmospherique*, the *Gazette Hebdom*, dated April 1st, 1859, reports a meeting of the French Academy of Sciences, at which M. Pouchet reported a paper as follows:

"The atmosphere which surrounds us holds

in suspension a mass of corpuscles, the detritus of the mineral crust of our globe, animal and vegetable particles, and the debris of all that is used for man's purposes. These diverse corpuscles are proportionably more numerous and voluminous as the atmosphere is more or less agitated by the wind, and it is to these that the term dust has been applied."

The author enumerates the various corpuscles of mineral, animal, and vegetable origin with which the air is loaded. Under the latter — the vegetable products — he mentions especially particles of wheat, which are always found mixed with dust, be it recent or old, as well as those of barley, rye, potatoes, which have been discovered in rare instances.

"Astonished at the proportional abundance of flour which I have found among the atmospheric corpuscles," says Mr. Pouchet, "I undertook the task to examine the dust of all centuries and of all localities. I have explored the monuments of our large cities; those of the shore and those of the desert; and in midst

of the immense variety of corpuscles that universally float in the air, almost always have I found the dust of grain, in greater or lesser abundance. Endowed with an extraordinary power of preservation, years seem scarcely to have altered it.

"Whatever may be the antiquity of atmospheric corpuscles, we find among them the dust of grain yet recognizable. I have discovered it in the most inaccessible retreats of our old Gothic churches, mixed with their blackened dust of eight centuries; I have met it in the palaces and hypogées of Thebes, where it dates back perhaps to the epoch of the Pharaohs. I have found it even in the interior of the tympanal cavity of the head of a mummified dog, which I have recovered from a subterranean temple of upper Egypt.

"It can be proposed as a thesis, that in all countries where wheat forms the basis of food, its debris is mixed throughout with the dust, and may be detected in it in larger or smaller quantities."

Perhaps the reader will pardon the quotation of an article entire, written by some un-

acknowledged worker for human entertainment and profit:

"Whence *does* the dust all come? You may sweep your room twice every day, and you will find that a cloud arises every time the broom and the floor make acquaintance. You may dust every article of furniture, every book, every picture; you may wipe all about the book-shelves and the floor with a damp cloth; and yet, after all your labor, there will be dust. Dust flying in the air; dust settling on the books and tables; dust on the pictures, on the flowers — dust, dust every where. It *is* discouraging. You think, perhaps, that 'tis because the room in which you sit is so large; you think that if you were in snugger quarters there would not be so much of this annoyance; you therefore move into a smaller apartment, but you are worse off now than you were before. You can't turn around quick, nor even heave a sigh, without setting in motion ten thousand tiny particles of dust. You may sweep till your broom fails, and dust till your arms fall off, and the story will be always the

same. Even out at sea, where the good ship rides the billows, thousands of miles from land, the dust gathers. It matters not how much the sailors rub the masts and holystone the decks, the dust *will* gather, even amid the salt spray of the sea. It is forever flying and settling wherever there is any solid substance on which it can alight. Where it comes from is no mystery, when we remember what sort of things we are.

"*Dust thou art, and unto dust thou shalt return,*" is written on clothing, on wood, and iron and steel, just as truly as it is in our frail, perishing flesh; and this changing and going back to its despised original is going on before our very eyes, in each thing that we look upon. Constantly — some rapidly, others with a slower waste — but certainly all things are returning whence they came. 'Tis enough to make one *fear* the dust — to make one feel a *horror* at the atoms falling on one's garment and one's limbs, to read and understand their language. That language is one of decay and death; of earth, the grave, and worms; of darkness, forgetfulness, and despair. This, if one can not look

beyond the dust, and see and take hold upon the eternal life.

"How carefully and purely should we step through the world, did we but read, as we walk, all that is written for our admonition and warning. But we go hastily, with careless eye and dumb heart, taking little heed when we should be most studious. Many there be who have deep skill to read the dark sayings who yet have never understood the plain language of the gathering dust."

Under the head of "Analytical and Critical Reviews," in the *British and Foreign Medico Chirurgical Review* for January, eighteen hundred and fifty-nine, is the following: "The fact seems to come out strikingly in these investigations, that one marked indubitable cause of lung diseases, and especially of consumption, is the inhalation of fine hard dust. This seems to be the case in Warwickshire, especially where the metallic manufactures are of a kind to give rise to such dust,

more than where the work is of a coarser description. The same fact is observed where fine pottery is made; it is well known in the hardware manufactures of Yorkshire, and the mortality of mines where the ore lies in dry sandstone, is said to be from the same cause.

"On the other hand, where the dust inhaled is of a soft character, as in woolen, flax and cotton factories, asthma and chronic bronchitis are more prevalent, as also in lace-making and straw-bonnet making."

Alston, England,is situated in a most salubrious country district, yet there are more widows there than in any other district in Great Britain; at the same time, fewer infants die in Alston than in many other parts of the country. The actual facts of the case make this a very suggestive item in connection with the deleterious influences of an atmosphere loaded with foreign particles. Alston is the most exclusively lead-mining district in England, but only

the men work in these mines, where they are constantly breathing a dusty atmosphere, hence their early decease.

But it is remarked that more women die of consumption in the healthy atmosphere of Alston, than in other localities which do not enjoy so pure an air. This is accounted for as "due to acquired hereditary tendency," those women having been born of men who breathed habitually a dusty atmosphere, bringing to the mind the strong conviction of the sentiment uttered on a preceding page, that children begotten by persons sleeping together in the same small room for eight hours out of every twenty-four, must inevitably partake of the parental infirmity, which, not enough to kill the parent outright, not enough to destroy the power of reproduction, not enough to eat out the life of the new-born in its first years, yet is enough to lay the foundation, either of actual disease or of feeble capabilities of resisting the ordinary causes of disease, with

the result of becoming life-long martyrs to depressing and wasting sickness, to end in premature death. These are facts collected by men of ability, of industrious research; facts gathered with reference to the discussion of theories of a different nature, hence are the more valuable; and those not convinced by these would not likely be by the piling up of pyramids of such like.

The great difficulty in having these statements result in immediately practical results, lies in this, that death does not presently follow from two persons sleeping together all night in the same bed or room. Were this the case, the task were easily performed, and a few pages would tell the whole story. But most assuredly, wise men, of pecuniary ability, are most inexcusable if they do not arrange in all their families, that each member have, as far as possible, a separate, airy room, to sleep in.

The fact has been already stated, that one of

the very first channels of expenditure, on the part of those who are improving their pecuniary condition, is in the direction of more house-room; and this may reasonably be considered, at least, one of the causes of the undisputed fact, that in France, the average life of those who are well to do, is twelve years longer, than of those who are considered poor, and consequently huddle together more, and are restricted to fewer apartments.

It is true, as has been remarked on a previous page, that there are multitudes who have slept two and three in a bed, and double the number in the same room, and yet have lived to a good old age. But such persons generally live in very open houses, and spend most of the twenty-four hours in the open air, in necessary labor, and these act as counteracting causes. But this argument is of little weight, inasmuch as the constitution of these hardy people, seldom, with all its strength and advantages, descends to their children, rarely indeed

to their grand-children; and that their close living has a tendency to deteriorate the vigor of their descendants, can not reasonably be denied.

As communities become enriched, their modes of life grow more enervating; hence the necessity increases of greater care to ward off disease, of removing its causes, and of guarding against the avenues of sickness. What our fathers did with their stalwart frames and iron constitutions, and simple, temperate and regular modes of life, we attempt at our peril, with our easy, gormandizing, pampered ways, our furnace-heated apartments, and our dwellings, three rooms deep, with chambers all guiltless of a window, with curtained apartments as gloomy as the grave, and into which the blessed sun-light never enters, except on chance occasions, few and far between. Hence, if our motto be, "As our fathers lived, so will we," we will not live long; we will perish in our

folly, and if we leave descendants behind us, they will be but shadows, the mere outlines of men and women.

All know that emanations are constantly passing from the body, its impurities, its dead and effete matter, which nature has no use for, and which she is constantly endeavoring to cast off by the pores of the skin, the average number of which for each square inch of the body is estimated by Erasmus Wilson to be two thousand five hundred, or seven millions in all, making, if joined together, a canal twenty-eight miles long, which conducts from the system every twenty-four hours, in a state of sensible perspiration, or water called "sweat," or insensible perspiration, called "vapor," three pounds and a half from one person in the ordinary occupations of life, and much more in extraordinary callings. For example, men employed in keeping up the fires in the gas-works, were found to have lost in weight, on an average, over three pounds in forty-five

minutes, while some, in an unusually hot place, lost as much as five pounds two ounces in seventy minutes' work.

The insensible perspiration from a sleeper during the night, is of itself enough to taint the atmosphere of a whole room, even a large one, as almost every reader has noticed on entering a sleeping-chamber in the morning after having come directly from the out-door air; and it is the breathing and rebreathing of an atmosphere contaminated in the variety of ways alluded to, which makes the night the time of attack of the great majority of violent human ailments; it is this which fires the train of impending disease, and which would have been deferred, if not entirely warded off, with the advantages of a pure chamber. It is from close bed-rooms come the racking pains of fever, its torturing thirst, and speedy death; this it is which wakes up the cholera morbus, the cramp colic, the bilious diarrhea, and the multitudes of other ailments which surprise us

in the night-time, and from which, it is worthy of repetition, a night of good sleep in a clean, pure, and well-ventilated chamber would have effected a happy deliverance, as expressed in the familiar phrase of "sleeping it off."

It is related that a whole family was once suffering from sickness which no skill of the physician could abate, when accidentally a window-glass was broken out, and the means not being at hand for repair, the entire family began to get well; the cause of the improvement was at once suggested to be the broken pane, which admitted a purer air.

It is not known as extensively as it ought to be, that if the effluvia which escapes from the human body in a close room, is breathed by another person, some of the most incurable forms of disease result therefrom, especially the "low fevers," as they are called, as well as "typhoid" ailments, which oppress the whole man, putrefy the blood, take away all sense and feeling, when muttering delirium comes

on, to be followed apace by a mortal stupor, and the man passes away, but "makes no sign." All must look upon such a death with shrinking, and yet it is frequent in the abodes of the poor, whom hard necessity compels to huddle together like pigs in a pen. Lesser degrees of this crowding together will have a proportionate ill effect, without the possibility of avoidance. The whelming avalanche does not the less come because its motion is not at first perceivable, and as inevitably will come the destructive effects of crowded sleeping apartments, not only curtailing the health and vigor and life of the sleepers themselves, but in perpetuating human infirmity on the innocent ones to whom being is given under the circumstances.

The high moral effect of each member of a family occupying separate chambers, will be least contravened by those who know most of human nature. There is great practical truth in the saying that "No man is a hero to his

valet." "All men," said the first Napoleon, "lose on close view." Proofs of this are constantly recurring to the observation of the thoughtful. Hence there must be a greater or less depreciatory effect in the close associations of "bed-fellows." Those who, by humanity or self-interest, or in the discharge of official duty, have become familiar with persons living in crowds, have frequently given their testimony to the moral debasements, social, physical, and mental, which follow therefrom; and that these feed on one another, is proven by the testimony of one of the reporters connected with the New-York *Daily Times*, as detailed in the issue of that journal for the first day of July, eighteen hundred and fifty-nine. No person of feeling and refinement can read the account without a shudder. And as these things are in passing, in the middle of the nineteenth century, in the richest city on the continent, and within five hundred yards of Broadway, one of the most magnificent streets in the

world, occurring every night, being literally a standing institution, it is convincing proof that a book on the subject of human beings herding together, in personal propinquity, is a want of the times. The article referred to is headed

"THE ABODES OF THE POOR.

VISIT TO THE CELLARS AND ATTICS OF THE FOURTH WARD, NEW-YORK CITY.

COW BAY AT MIDNIGHT.

"THERE is no pleasure in visiting the haunts of wretched men and women, and none in writing about them. Indeed, if we tell what makes their abodes most wretched, cleanly people think we have sullied our sheet. Still, it is wholesome to know how humanity suffers in our midst, how it even contents itself amidst its suffering. We continued our rambles in the Fourth Ward last week.

"A house in Dover street, near Front, for its rickety, lazy look — as if the winds must not visit it too roughly lest it throw up all efforts to maintain its uprightness and crumble down —arrested attention. The policeman said it

would be an ugly place to visit at night, but by daylight was safe enough. Picking our way through the filth on the staircase, we ascended to the second story. A knock on the half-open door of the first room brought no answer. Pushing in, a fat baby, some two years old, whose face was plastered thick with dirt, sat on the floor, a cat purring at her side. On the bed lay a woman dead drunk — a nursing infant cuddled beside her. No other person was visible, about the premises. Before frightening the baby or alarming the guardian kitten we retreated. In the next room two women were idly gossiping. We asked who lived in the room we had just left. They said it was a woman who had gone out somewhere. In the third room, a woman was washing—she said she knew nothing about the rest of the house, and didn't know what rent she paid. Ascending another flight of stairs that creaked and trembled at every step, we found one vacant room under the attic. In another a woman lay drunk on the floor, face upward, snoring heavily. Two children, about three and seven years old, were playing together. There was no means of exit from this house except by

the front-door. The out-house of the concern was accessible through the adjoining shed, where a negro kept a rum-shop.

"We next visited the cellars in James street, between Oak and Madison. One of them, kept by a man of insignificant stature, but considerable self-respect, was particularly interesting. This and the adjoining house are old two-story shanties; still, one of them rented last year for $387. For the two, $550 was offered and refused this year. The cellar was just deep enough for us to stand erect in with our hats on. It was fitted up for lodgers. It contained no bedsteads, but on the left side as we entered, two shelves were placed against the wall, one above the other, making accommodations for four beds. A door on the right opened into a room where more shelves were placed for the same purpose. Stooping low to avoid a beam, we passed to the rear-room, where were a stove, a few kitchen utensils, and three more beds. Passing into the area behind, we thought we had seen the last bed, but the landlord opened the door of what was built for an ash-hole, and pointing through the darkness to a heap of rags, said that it was his bed. The side of a

shoe-box fastened by leathern hinges, stood as a door to what we took for a dog-kennel—but he said it contained another bed. All told, the beds numbered eleven. Our policeman said he had seen one of them occupied by a woman and her five children. The landlord protested, however, that he only took in male lodgers, and "some of them were gentlemen too—captains who sailed their own boats, having been on a bit of a spree, and coming here to sleep it off before going on board." He charged a shilling a night for lodgers, and meant to take none but those he knew; but they would break his door down if he didn't take them in, so sometimes his company wasn't so select as he would choose to have it.

"In the next cellar were three women. They too took lodgers, but only families that they knew. While the two who belonged on the premises were quietly responding to our inquiries, a young woman, who sat on the side of a bed, gaudy in a high-colored and low-necked dress, suddenly burst out in a very loud tone of voice, but decidedly a low tone of morality, that her cha-rack-ter was being assailed; that she knew some body who would not stand it;

that if some folks could not attend to their own business, she knew some body who knew what was what, etc. The two ladies of the cellar fell to quieting their gayly-dressed visitor, in such loud tones of entreaty to shut up and be civil, and not be offended, and of assurance that no body meant her, whereupon she grew so much more turbulent, and they so much more demonstrative in their efforts to hush her, that the policeman on that beat turned in to see what the row was, and we prudently retreated.

"Our next visit was to the famous Cherry street tenement-house. It consists of two buildings, both standing with their ends toward Cherry-street, one double the width of the other. Between them runs 'Gotham-court,' into which the lower entry-ways open. 'East Gotham-court' is the alley into which the denizens of one half of the larger building debouch. The wisdom of the builders of this five-story box of brick and mortar for the packing of mortals, led them, when there was a fair opportunity to get a ventilation, carefully to exclude it. If you enter from Gotham-court, wishing to get through to East Gotham-court, there is no way but to climb to the roof and pass down

again five flights of steps, and if a current of air should feel inspired to blow through, it would need to take the same route, which of course it would refuse to take, and die out first, vainly endeavoring to dilute the prevalent stench. As if eight feet width of air, walled in between two five story buildings, might still be rather raw and cool for the lungs of those whose windows open upon it, the proprietors of the place have erected at the far end of the court a blacksmith shop, whose perpetual emission of charcoal smoke and heat tempered the summer wind to the pretty well shorn lambs inside. Five years ago the Croton water pipes were laid on each floor, but since then they have been taken out; and if, under the eaves of this model tenement, a weary woman should resolve to try the virtue of cleanliness, she must first descend to the foot of all the stairs to fill and then tug up to the top again with her pail of water. Some ninety-six families claim this abode as their home, and pay variously from $4.50 to $6 rent. It has no cellar, but from every hall a flight of steps leads down to a drain under the pavement of the court, that empties into the street-sewer. Over

this drain are erected the water-closets, without doors. The stench that emanates from this drain, and that is thrown back from the sewer, pervades the whole place. A more successful device to poison slowly, on a large scale, hundreds of poor people, could not easily be conceived.

"This ended our tour for the day. The wretchedness it exposed seemed as if it could scarcely be paralleled in a civilized city, but to some of the miserable shanties we looked back after our next expedition, and in comparison they seemed cleanly, wholesome, and tolerable!

"It was late Sunday night when our party set out from the Sixth Ward Station-house, under convoy of Sergeant Preston, and another officer, who took the lead, lantern in hand. The first cellar visited was at No. 35 Baxter street. Down half a dozen rickety steps, the door was already open to one of the filthiest, blackest holes we had yet seen. The stout Irishman, who claimed to be landlord, assured us that we should find clean sheets in his lodging-house, whereat we laughed, supposing him to be of a merry turn; but he was in earnest—

he washed them himself every Thursday, he said. We looked in vain for sheets, however; they might have been there, but all the bed-clothes were of one color, whatever their texture. There were bunks arranged along the wall, two or three deep, and in most of them men or women, black or white, sleeping soundly. The glare of the lantern in their eyes did not disturb them at all—pretty clearly indicating the possession of consciences cleaner than their faces, or that the sleeper had had the run of the back-door into the liquor-shops during the day. The landlord charged sixpence a night for lodging, and lodged none under any circumstances but honest hard-working people—which statement the police received with smiles and without contradiction. Two inner rooms were equally well occupied—in one of the hideous beds two children sleeping as sweetly as if their couch had been down, and the horrible den a cottage. The older sister of these children was out begging even at this hour.

"In another cellar close by, a young woman with a single scanty garment on, sat on a chest crying. That old woman's husband, she said,

(the keeper of the place,) had been 'banging his wife, and hit her a lick sideways that almost killed her.' The wretch had kicked another girl so severely that she had gone to bed early in the day and not got up since. The person thus alluded to, lay on a pile of shavings in the corner of the room, snoring vigorously. The old woman, wife of the brute who administered the 'banging,' the 'sideways lick,' and the 'kick,' sat on the side of her bed in very good spirits. The old man was a little wild when he was in liquor, but he'd gone now, and that was a comfort. She sympathized with the crying woman, and said it was a shame to treat the other girl as he did, but he'd gone now. She evidently was disposed to let by-gones be by-gones. There was a child asleep in a cradle, whose mother was also asleep in another bed. Two men slept soundly in the next bunk, and never minded the light suddenly flashed on them from the lantern. But the state-bed, the one that occupied the central position, and looked as if a double fare had to be paid for its use, was occupied by a stalwart negro. 'Then you have no prejudices about color?' we asked. 'No,' said the old woman,

'he pays for his bed, and his money is as good as any body's.'

"The next visit was to a spot a little south of the Ladies' Five Points Mission-room. The access to it was through a long, winding hall. Reaching the end, the door of one room stood half-open, through which a giant negro was visible, lying in bed, and, by the light of a candle, reading a yellow-covered novel. 'Who's there?' he asked, but as no one answered, he kept his eyes on the crack of the door, though the book was still held in its place. But it was at an adjoining door at which the officer knocked. The only answer was a volley of oaths. Another knock and another explosion of oaths. 'Come, Mose, turn up and let us in,' said the officer, and his voice seemed to explain the matter, for there was soon heard a noise inside as of Mose fumbling for his clothes, and of feet shuffling off into a distant part of the room. At last Mose was ready. He turned a key, took down two bars, drew a bolt, and took the lighted match handed to him. A bottle in the center of the floor held the candle, to which he applied the light, and Mose's quarters were dimly visible. It

was a large room, with a low ceiling, hung round with torn posters of great mass-meetings and candidates for office, pasted up, however, not so much for ornament as to stop the chinks in a windy day. In one corner lay a man asleep on a blanket; in the distant corner lay rolled into a heap, from which Mose essayed in vain to kick off the blankets and show the face of his wife, two white women. His own bed was invisible, though when asked where it was, he pointed to the fireplace. There was no furniture of any sort on the premises. Mose apologized for being sober; the Sunday liquor-law didn't work very well for him—being short, and every thing shut up, he had gone to bed earlier than usual. He was about the blackest specimen we had yet crossed, his legs were set on his body crookedly, his stature exceedingly short, and his humor large. He evidently felt flattered by the visit, and boasted that, though his room was nearly empty now, it was generally full enough. He could accommodate with a board on his floor all that would come.

"Leaving Mose to mourn his enforced sobriety, the officer pushed open the door of the

colored bachelor whom we had seen reading in bed. His book was the *Volunteer*, one of the choice issues of the Philadelphia press. He was evidently in an interesting passage when we entered, and had no courtesy to spare for us. He answered questions with the air of a man who feels that his house is his castle, which no man has a right to enter unless to search for stolen goods. He would be obliged to us if we would knock the next time we came—gentlemen always did. He declined to bid us good night as we left. His room was a contracted one, but his outfit of crockery and kitchen-ware creditable—showing that though literary tastes may not conduce to polished manners, they are not always inconsistent with order and neatness.

We dropped into another cellar, some twenty feet long and ten feet wide, at one end, and eight at the other. Two tiers of bunks, placed end to end along the side, were only in part occupied. In an emergency the sleepers were tucked under the lower one on the earth. Twenty could be lodged there comfortably, said the German lessee of the premises, and he had taken thirty in. The loud voices of

the people carousing in the 'closed' bar-room over head did not prevent one little one from sleeping soundly by the side of its mother. Air there was none, nor could be, except as it might be forced in through the only door of entrance. Quite a company had gathered about the cellar-way, who asked as we left, 'whether we found it?' When assured that we were not looking for stolen property, one asked earnestly, if it was yellow fever we were looking for then, instinctively presuming in what haunts Yellow Jack will be sure to be found when on shore.

"Next, we turned into Cow Bay, and in turn explored most of the rooms that are entered from this noted alley. Climbing to the top of one of the furthest up, much knocking on the door brought an answer from a gray-haired old man who deplored his poverty. He used to take lodgers, but all his bed-clothes had been stolen, and now he had none, but lived in filthy solitude. In another attic room a black man owned the drunken white woman at his feet on the floor as his new wife. Three wretched white women were in a corner, one of whom protested that theirs was the true

happy family, but their ribaldry degenerated into angry oaths and curses on us as we left. A vacant room adjoining emitted a most sickening odor, and for causes that were apparent on entering it. In another an infant was crying. A woman of reputable appearance and cleanly, who was trying to comfort it, with a scowl of despair on her face, said her husband was away, locked up now three months, as a witness. And so they all were, each with a tale of misery to tell, or if asleep, with a still more hopeless story written in their faces. Some of these people pay rents that would secure for them decent apartments in decent parts of the city. But they seldom leave them, except to go up to Blackwell's Island, or to their common lodging in the ditch of Potter's Field."

That the same degradations, social, civil, and moral, are found in other countries and other ages, to result from many persons herding together in the same small house, or hut, or single apartment, and that a change to larger apartments and more roomy buiidings, effects a like change in social character and position,

is strikingly illustrated by a writer of the past age.

"The town of Cardington, England, was one of the worst localities in the kingdom. Like all others of their class, the huts of the people were huddled together, were dirty, ill-built, ill-drained, imperfectly lighted and watered, and altogether, so badly conditioned and unhealthy, as to be totally unfit for the residence of human beings. While thus miserably cabined, compelled to be uncleanly on their domestic hearths, uncomfortable in their homes, any attempt to improve their minds, to induce them to become more sober, industrious, and home-loving was useless, except by first aiming to improve their physical condition, to supply them with the means of comfort, attaching them thus to their own fireside, the great center of all pure feelings and sound morals, to foster and develop in them a relish for simple domestic enjoyments and thus open to them a way to the attainment of such moderate intellectual pleasures, as their lot in life did not forbid."

To these wise and humane ends the first

step taken was to render the homes of the poor fitter dwellings for self-respecting men, by removing the mud huts, and replacing them with handsome little cottages, and in a few years, Cardington became one of the most orderly and prosperous localities in the kingdom; the people kept their homes neat, clean and comfortable, while they themselves became honest, sober, industrious, and religious; and at the end of nearly a hundred years, this same village is distinguished for the order, regularity, respectability, and thrift of its inhabitants. These changes, be it remembered, were commenced by exchanging the contracted mud hut of the family, for the roomier and more inviting cottage. In these mud huts, as in Ireland to-day, which the author has visited in person, a whole family dwells, of half a dozen or more, in the one single room, which answers at once for kitchen, chamber, dining-room, and parlor. In such a mode of life there must be degradation, self-debasement

and disease, proving fully all that was charged on a previous page; and more, that the breaking up of this huddling, crowded life, with other things which naturally follow in their train, is the first, the essential step towards elevating the people and fitting them for the duties of citizenship and religion.

The force of the above statements, which are corroborated by other writers, will be parried perhaps, by those living in the country, by saying that they apply only to the crowded portions of large cities, but that those who live in separate dwellings in the healthful and pure atmosphere of the country, need not be specially careful in having large airy rooms for each individual member of the family.

To this it may be replied, that Dr. Greenhow, in an official paper on "The Preventability of certain kinds of Premature Death," published in London in eighteen hundred and fifty-eight, states that one half of the deaths occurring in a certain district within a period

of seven years, were of persons under twenty years of age, and that such a result —

"Does not require large aggregations of impurity for development. A neglected sewer, ash-pit or cess-pool, an unsound soil-pipe, whether in town or country, may be all that is required.

"The farm-house or laborer's cottage, nay the mansion of the squire, though situated in the most healthy district, if putrefying animal and vegetable refuse is permitted to taint its immediate atmosphere, is as liable to be invaded by fever, as the town dwelling in a close alley.

"The taint of the atmosphere in the vicinity of fermenting and decaying matter, proceeds chiefly from the *gases*, but partly also from organic matter, in a state of active decomposition. Letherby and Barker most thoroughly demonstrate, not only how certainly sewerage gases affect both health and life, but how small a proportion of the gases are capable of extinguishing of life, giving rise to forms of disease according to the intensity and duration of their administration.

"The demonstrations of Dr. Barker were chiefly in the way of experiment. Exposure by means of a suitable and ingenious contrivance, to the gas of a large cess-pool, proved fatal to a mouse, and produced in larger animals, a series of symptoms analogous to those of febrile disease. Sulphureted hydrogen, carbonic acid and ammonia, (hartshorn,) the principal and most deleterious components of sewage gas, were experimented with separately. Of the first, less than two per cent in the air killed a puppy in two minutes and a half, and so small a proportion as forty-three hundredths (or less than one half of one per cent) killed another within the hour.

"A dog exposed to an atmosphere containing one quarter of one per cent of the gas, died in nine hours and a half, but another in the same description of atmosphere, suffered at first, but soon recovered. Others were more violently affected in a less contaminated air.

"Hartshorn and its salts produced what may be unhesitatingly considered typhoid symptoms; and prostration and diarrhea followed the inhalation of carbonic acid in small proportions."

Two most important facts developed by

these statements are, *first*, that different individuals are affected with a different degree of violence on exposure to the very same causes of sickness, as was exhibited in the matter of the "National Hotel Disease." Second, the small amount of a deleterious gas mixed with the atmosphere, sufficient to produce disease. Let it be remarked that sulphureted hydrogen, carbonic acid and ammonia, so small a proportion of which being mixed in a pure atmosphere causes disease and death, are the very gases which are given out in largest proportions by a sleeper, and the usual standing liquids of a chamber.

In the cutting of the Thames Tunnel, the workmen suffered seriously from the deleterious gas. Falling away in flesh, low fever, and actual death, were the result in several cases, and this, when all chemical tests, and those of the most delicate kind, failed to discover more than one part of the gas in a hun-

dred thousand of the air in which they worked.

These facts show beyond denial, that it matters not how healthful the location of a man's residence may be, whether in city, village or country, whether on a plain or on a mountain-top—if there are causes in operation which taint the atmosphere of the room in which he spends hours together, disease will inevitably result, and speedily. And as crowding in rooms and sleeping together in the same bed, are indisputable causes of a vitiated atmosphere, it would seem to be an imperative duty on the part of all reflecting persons, to make it a study how to best secure large, airy, well-ventilated rooms to sleep in, one person in a bed, and, as often as practicable, one apartment to each person.

In order to make an ineffaceable impression on the reader's mind, of the immediate deadly effects of breathing a bad air, the very kind of air which comes from the lungs at each out-

breathing, to wit, Carbonic Acid Gas, the following memorandum of a French gentleman is given verbatim. From some cause, he became tired of life, and not being willing to commit the fearful crime of self-destruction, without having something useful connected with it, he wrote a statement of his sensations as long as he was able to trace an intelligible line, thus securing for himself an immortality, which, perhaps, could never have been achieved by him in any other way. M. Deal resolved to destroy himself by burning charcoal in a close room, and thus narrates:

"I have thought it useful in the interest of science, to make known the effects of charcoal upon man. I place a lamp, a candle and a watch on my table, and commence the ceremony.

"It is a quarter-past ten; I have just lighted the stove; the charcoal burns feebly.

"Twenty minutes past ten; the pulse is calm, and beats at its usual rate.

"Thirty minutes past ten; a thick vapor

gradually fills the room; the candle is nearly extinguished; I begin to feel a violent headache; my eyes fill with tears; I feel a general sense of discomfort; the pulse is agitated.

"Forty minutes past ten; my candle has gone out; the lamp still burns; the veins at my temple throb as if they would burst; I feel very sleepy; I suffer horribly in the stomach; my pulse is at eighty degrees.

"Fifty minutes past ten; I am almost stifled; strange ideas assail me. . . . I can scarcely breathe. . . . I shall not go far. . . . . There are symptoms of madness. . . .

"Sixty minutes past ten; I can scarcely write. . . . my sight is troubled. . . . My lamp is going out. . . . I did not think it would be such agony to die. . . . ten . .

". . Here followed some quite illegible characters. Life had ebbed. On the following morning he was found on the floor."

The expired breath is loaded with Carbonic Acid, which was the agent of death, in the case just cited. The fatal effects were produced in a little over an hour. But not less destructive are the results of breathing the atmosphere of a

room crowded with human beings, as was terribly illustrated in the passage of the steamer Londonderry, which left Liverpool on the second of December, eighteen hundred and forty-eight, for an Irish sea-port. A sudden and fearful storm came on, which threatened the immediate destruction of the vessel. In order to allow the sailors the fullest opportunity of managing the ship well, the passengers, two hundred in number, were required to go below into the cabin, which was eighteen feet long, eleven wide, and seven high. The hatches were closed, and a stout tarpaulin was fastened over the only entrance, so as to prevent the passengers from coming on deck in their uncontrollable alarm. There is no evidence to suppose that the captain acted otherwise than in good faith. He took the course, best calculated in his own opinion, to secure the safety of the vessel and passengers, but he was fearfully ignorant of the nature of bad air and human emanations; as much so, perhaps, as some who

may read these lines. He acted on the "spur of the moment;" there is no time for deliberation in a sudden, fearful storm at sea. The result, however, was, that in a short time, in the fearful agony of the death-struggle, the surging mass of suffocating unfortunates burst open the hatches and poured out on the deck, the blood started from nose, eyes, and ears, and horrible convulsions agonized the sufferers. Many were dying, seventy-two were already dead! What they endured, no pen has described; but in the very nature of the case, they must have endured the terrors of the Black Hole of Calcutta, already referred to; and in the wish to produce complete conviction on the reader's mind as to the corrupting influences which human emanations have on the atmosphere of a close room, and as to the deadly effects of breathing such an air, the description of Commander Holwell is given, as printed in the *Annual Register* for seventeen hundred and fifty-eight, he, himself having been one of the prisoners.

"Figure to yourself the situation of a hundred and forty-six wretches, exhausted by continual fatigue and action, crammed together in a cube of eighteen feet, in a close sultry night in Bengal, shut up to the eastward and southward (the only quarter whence air could reach us) by dead walls, and by a wall and door to the north, open only to the westward by two windows strongly barred with iron, from which we could receive scarce any circulation of fresh air. . . We had been but a few minutes confined before every one fell into a perspiration so profuse, you can form no idea of it. This brought on a raging thirst, which increased in proportion as the body was drained of its moisture. Various expedients were thought of to give more room and air. To gain the former it was moved to put off their clothes; this was approved as a happy motion, and in a few moments every one was stripped —myself, Mr. Court, and the two young gentlemen by me, excepted. For a little while they flattered themselves with having gained a mighty advantage; every hat was put in motion to gain a circulation of air, and Mr. Baillie proposed that every man should sit on his

hams. This expedient was several times put in practice, and at each time many of the poor creatures, whose natural strength was less than that of others, or who had been more exhausted, and could not immediately recover their legs, when the word was given to rise — fell to rise no more, for they were instantly trod to death or suffocated. When the whole body sat down, they were so closely wedged together that they were obliged to use many efforts before they could get up again. Before nine o'clock every man's thirst grew intolerable, and respiration difficult. Efforts were made to force the door, but in vain. Many insults were used to the guard to provoke them to fire on us. For my own part, I hitherto felt little pain or uneasiness, but what resulted from my anxiety for the sufferings of those within. By keeping my face close between two of the bars I obtained air enough to give my lungs easy play, though my perspiration was excessive, and thirst commencing. At this period, so strong a urinous volatile effluvia came from the prison, that I was not able to turn my head that way for more than a few seconds at a time.

"Now every body, except those situated

in and near the windows, began to grow outrageous, and many delirious. Water! water! became the general cry. An old Jemmantdaar, taking pity on us, ordered the people to bring us some skins of water. This was what I dreaded. I foresaw it would prove the ruin of the small chance left us, and essayed many times to speak to him privately to forbid it being brought; but the clamor was so loud it became impossible. The water appeared. Words can not paint the universal agitation and raving the sight of it threw us into. I flattered myself that some, by preserving an equal temper of mind, might outlive the night; but now the reflection that gave me the greatest pain was, that I saw no possibility of one escaping to tell the dismal tale. Until the water came, I had not myself suffered much from thirst, which instantly grew excessive. We had no means of conveying it into the prison but by hats forced through the bars; and thus myself, and Coles, and Scott, supplied them as fast as possible. But those who have experienced intense thirst, or are acquainted with the cause and nature of this appetite, will be sufficiently sensible it could receive no more

than a momentary alleviation; the cause still subsisted. Though we brought full hats through the bars, there ensued such violent struggles and frequent contests to get it, that before it reached the lips of any one, there would be scarcely a small teacupful left in them. These supplies, like sprinkling water on fire, only seemed to feed the flame. O my dear sir! how shall I give you a just conception of what I felt at the cries and cravings of those in the remoter parts of the prison, who could not entertain a probable hope of obtaining a drop, yet could not divest themselves of expectation, however unavailing, calling on me by the tender considerations of affection and friendship. The confusion now became general and horrid. Several quitted the other window (the only chance they had for life) to force their way to the water, and the throng and press upon the window was beyond bearing; many, forcing their way from the further part of the room, pressed down those in their passage who had less strength, and trampled them to death.

"From about nine to eleven I sustained this cruel scene, still supplying them with

water, though my legs were almost broke with the weight against them. By this time I myself was near pressed to death, and my two companions, with Mr. Parker, who had forced himself to the window, were really so. At last I became so pressed and wedged up, I was deprived of all motion. Determined now to give every thing up, I called to them, as a last instance of their regard, that they would relieve the pressure upon me, and permit me to retire out of the window to die in quiet. They gave way, and with much difficulty I forced a passage into the center of the prison, where the throng was less by the many dead, amounting to one third, and the numbers who flocked to the windows; for by this time they had water also at the other window. . . . I laid myself down on some of the dead, and, recommending myself to Heaven, had the comfort of thinking my sufferings could have no long duration. My thirst now grew insupportable, and the difficulty of breathing much increased; and I had not remained in this situation ten minutes before I was seized with a pain in my breast, and palpitation of heart, both to the most exquisite degree. These obliged me to

get up again, but still the pain, palpitation, and difficulty of breathing increased. I retained my senses notwithstanding, and had the grief to see death not so near me as I had hoped, but could no longer bear the pains I suffered, without attempting a relief, which I knew fresh air would and could only give me. I instantly determined to push for the window opposite me, and by an effort of double the strength I ever before possessed, gained the third rank at it—with one hand seized a bar, and by that means gained a second, though I think there were at least six or seven ranks between me and the window. In a few moments the pain, palpitation, and difficulty of breathing ceased, but the thirst continued intolerable. I called aloud: 'Water, for God's sake!' I had been concluded dead; but as soon as the men found me amongst them, they still had the respect and tenderness for me to cry out, 'Give him water!' nor would one of them at the window attempt to touch it till I had drunk. But from the water I had no relief; my thirst was rather increased by it; so I determined to drink no more, but patiently wait the event. I kept my mouth moist from

time to time by sucking the perspiration out of my shirt-sleeves, and catching the drops as they fell like heavy rain from my head and face; you can hardly imagine how unhappy I was if any of them escaped my mouth. . . . I was observed by one of my companions on the right, in the expedient of allaying my thirst by sucking my shirt-sleeve. He took the hint, and robbed me from time to time of a considerable part of my store, though, after I detected him, I had the address to begin on that sleeve first when I thought my reservoirs were sufficiently replenished, and our mouths and noses often met in contact. This man was one of the few who escaped death, and he has since paid me the compliment of assuring me he believed he owed his life to the many comfortable draughts he had from my sleeves. No Bristol water could be more soft or pleasant than what arose from perspiration.

"By half-past eleven the much greater number of those living were in an outrageous delirium, and others quite ungovernable; few retaining any calmness but the ranks near the windows. They now all found that water,

instead of relieving their uneasiness, rather hightened it, and Air! air! was the general cry. Every insult that could be devised against the guard was repeated to provoke them to fire on us, every man that could, rushing tumultuously towards the windows with eager hopes of meeting the first shot. But these failing, they whose strength and spirits were quite exhausted laid themselves down, and quietly expired upon their fellows; others who had yet some strength and vigor left, made a last effort for the windows, and several succeeded by leaping and scrambling over the backs and heads of those in the first ranks, and got hold of the bars, from which there was no removing them. Many to the right and left sunk with the violent pressure, and were soon suffocated; for now a steam arose from the living and the dead which affected us in all its circumstances, as if we were forcibly held by our heads over a bowl of strong volatile spirit of hartshorn until suffocated; nor could the effluvia of the one be distinguished from the other. I need not ask your commiseration when I tell you that in this plight from half an hour after eleven till two in the morning, I

sustained the weight of a heavy man with his knees on my back, and the pressure of his whole body on my head; a Dutch sergeant who had taken his seat on my left shoulder, and a black soldier bearing on my right: all which nothing would have enabled me to support but the props and pressure equally sustaining me all round. The two latter I frequently dislodged by shifting my hold on the bars, and driving my knuckles into their ribs; but my friend above stuck fast, and, as he held by two bars, was immovable. The repeated trials I made to dislodge this insufferable incumbrance upon me, at last quite exhausted me, and towards two o'clock, finding I must quit the window or sink where I was, I resolved on the former, having borne truly, for the sake of others, infinitely more for life than the best of it is worth.

"I was at this time sensible of no pain, and little uneasiness. I found a stupor coming on apace, and laid myself down by that gallant old man, the Reverend Jervas Bellamy, who lay dead with his son, the lieutenant, hand in hand, near the southernmost wall of the prison. Of what passed in the interval, to the time of re-

surrection from this hole of horrors, I can give you no account."

Surely, further argument can not be needed to produce a practical conviction on the reader's mind of the absolute necessity to health, of so arranging, that these destructive, human emanations shall not accumulate in the chambers where a third of existence is passed, but that while as few of them as possible shall be emitted, even these should be swept away by such ventilating contrivances as will most efficiently secure so desirable an object; the two first steps being large rooms and separate beds.

A conjectural reason forms another argument against two persons sleeping near each other. Each individual has an amount of electrical influence, which in its normal proportion, is health to him. Electricity, like air and water, tends constantly to an equilibrium, and when two bodies come near each other, having different quantities, that which

has the greater imparts to that which has the less, until both are equal. The lightning and the thunder are caused by this exchange between a cloud which has plus, and another which has its own share, minus. Wind is the passing of air from a section which has more to a another which has less. But if a human body, with its healthful share of electricity or other influence, gives part of it to another which has less, it gives away just that much of its life, and must die, unless it is recovered in some way; hence the frequent fact, which it needs no authority to substantiate, that a healthy young infant, who sleeps with an old person, will wither and wilt and wane and die. Thus, also, the healthy have been observed to grow diseased themselves, by sleeping with sickly persons.

In the author's experience, of some twenty years, in the special study and treatment of common consumption of the lungs, the fact has stood out with constant confirmations, that

of the widows and widowers applying for relief, quite a large proportion had lost their companions by consumption.

On the other hand, no facts have come to light as yet, which prove that the more weak or sickly person is at all benefited by what injures the healthier party.

If then, two clouds of different electrical states, can not approach each other without a mutual change of conditions, and if a man, who has an electrical state, natural and healthful to him, comes near another in an unhealthful state, it would seem demonstrative that harm, by an unchangeable physical law, must fall to the healthier, without benefiting the other; and that sleeping together in the same bed, is a certain injury, and ought to be avoided as a habit, by every reflecting person, who is so fortunate as to have the means of having a room and a bed to himself. It certainly is undeniable, that influences are exchanged, call them what we may, which waste away the life

of the child, and make it wither and wilt and die, like a flower without water. The same is true of the robust sleeping with the weakly; and the feeble sleeping with the strong. This interchange of influence from close association, is such, that in the course of years, the man and wife have been taken for brother and sister. But it is a law of nature, enforced by authority, human and divine, that kindred shall not intermarry; observation shows that it deteriorates the race morally, mentally, and physically. This may point to the fact that human health, that the perfection of our physical nature, at least its preservation, is dependent to a great extent on intermarriages between persons who are at as great a remove as possible from one another, and, we may say, of electrical states, as different as possible. It must be confessed that this is conjecture as to the system, but the one fact is clear, that sleeping together in the same bed is destructive to health as between the old and the

young, as between the well and the sick, and we may infer as between persons of different constitutions.

A beneficent Providence has wisely ordered that the preservation and perpetuation of the race should depend on the gratification of certain appetites and propensities, and that such gratifications should be pleasurable. But a high wisdom dictates that these should not be blunted by immoderate indulgence, nor marred by too frequent repetition; and it should be remembered that they are all under the same general laws, for infinite wisdom avoids unnecessary complications and diversities. "Few and simple" may be considered the description of all the regulations neces sary for the preservation of corporeal man. "Regularity and moderation" is written on all that gives us pleasure, with a wise view that it should wear out only with life, and that at a good old age. The regulations connected with eating, drinking, sleeping, etc.,

are so much alike, the temptations to over-indulgence so constant, the necessity of restraint so apparent, and the evils of excess as to times and amounts, so much to be dreaded, that a volume might be filled in illustrating each. It may, however, suffice to treat only of one or two, leaving it to the intelligence and aptness of the reader to make a general application, and thus much time and space will be saved, while the practical lessons will be equally valuable.

Instinct is given to the brute, but diviner reason to man—the great end and aim of both being the preservation and perpetuation of the species of each. This instinct and reason were implanted for the purpose of regulating the enjoyment of those pleasures which are wisely and benevolently made a happiness and a necessity. Instinct leads the brute to the indulgence of the appetites, and how often and how much it shall eat and drink and sleep is apportioned in a manner

which makes excess impracticable; hence there is a happy exemption from the million forms of disease and pain and suffering belonging to the lot of man. He was made of a nobler nature, and was treated as a nobleman, in that he was not bound down to rules and regulations as inflexible as fetters of brass, but was left to govern himself, to choose for himself, to act for himself, with the reward of elevation here, and happiness hereafter, if he deported himself well; but with the penalty of suffering and death, physical and moral, if he failed to practice a high and wise and dignified self-restraint, the first element of which, as to eating, drinking, and sleeping, is uniformity. A certain amount of sleep rests, renews, and strengthens the whole man, but to accomplish such a result, sleep must be regular. As to what constitutes regularity, it is only necessary to remark, that the general habit should be to retire at the same hour in the early

evening of every day. In a short time the result will be an ability to go to sleep within a few moments after retiring, and to sleep continuously until morning, provided the sleeper leaves his bed at the moment he first wakes up, and does not sleep during the day. In this way sleep will be refreshing, will be delicious, and to the busy worker of brain or body, will be worth more than silver or gold, and this priceless habit of sleeping soundly will be continued to a good old age.

It is in one sense a daily miracle that a man wakes up out of sleep; the more it is considered, the more wonderful will it appear. With a regularity of retirement, and arranging to guard against interruptions, nature wakes us up the very moment the system has had enough repose, the propensity to sleep will come on within a few minutes of the regular time, will grow stronger until it is yielded to, and eventually will become in a measure irresistible, or its resistance will

be attended with great discomfort. Another result will be that the body will wake up from sleep within a few minutes of the same point of time, from one month's end to another, being a little sooner or a little later, making variations according to the temperature of the weather, the condition of the atmosphere, and the amount of the exercise of the preceding day. Thus it is with other desires of the animal nature. Let there be an appointed time, not to be changed for any common reason; the feelings will come at that appointed time, and when satisfied, nature calls for no more until the appointed time comes round again.

But suppose enough sleep is not given. Suppose we make an effort to rob nature of her due allowance, madness, unending and hopeless, is the result; if the curtailment is not great, various degrees of debility and wasting and decline come on apace.

Suppose, on the other hand, it is attempted

to force more sleep on nature than she requires, it is an unnatural sleep, it does not rest and refresh and invigorate; and instead of having more good sleep, the whole of it is restless and disturbed, and we lose the lusciousness of it all.

As to eating, there is a remarkable parallel. If a man eats when he is decidedly hungry, and at regular hours of the day, not stimulating or teasing or tempting the appetite by a great variety of food or otherwise, he will be regularly hungry under ordinary circumstances, will digest his food well, and will not desire it especially, except at the stated times.

If, on the other hand, the appetite is stimulated, if it is tempted, or if a person places himself in a situation where food can be had for the turning round, or for the stretching out of the hand, and it is taken when there is no special desire for it, and

when the person would just as lief let it alone as to take it, under these circumstances a fictitious and an unnatural appetite will be created, the digestion will be deranged, a depraved craving for food will be set up; but no sooner is it swallowed, than some troublesome feeling will arise, only to be arrested by another gratification; and thus the whole life is a craving, an unsatisfied desire, and so much of a burden that the predominating wish is to die.

In this same manner have multitudes fallen from high positions into degrading habits of beastly intoxication, by allowing themselves to have convenient drinks at hand, and at first to taste them, not for any particular relish, but just to be doing something; and having no regular hours for drink, and no regular quantity, an unnatural desire springs up, a steady craving is generated, increasing in its remorselessness day by day, until there

is no happiness but in constant indulgence, when at length even that ceases to satisfy, and life is a torture.

The appetites, then, are to be gratified at stated times, and at none others; they are not to be teased or tempted or stimulated by always having at hand the facilities for gratification, but kept in abeyance for fixed occasions; those occasions being determined at first by the decided calls of nature, which will then be made regularly, moderately, and continuously, to the end of life.

But if the means of gratification are kept at hand, if the mind is permitted to rest on them and cherish them, to look forward to them, to tempt and tease and worry, the inevitable result will be a morbid appetite, a voracious craving never to be satisfied, energies wasted, powers prostrated, and an early and irretrievable decay, inducing, in a greater multitude of cases than one in many would imagine, a depressed and soured life, and a

miserable suicide's grave. If the victim survives incessant tortures, life is but a drawn-out agony. Inordinate indulgence wastes away the physical constitution, the influence of which is perpetuated to all that is born of it; throwing around the hapless victim the slimy coils of a boa-constrictor, which are tightened pitilessly every day, until health and hope, and life itself, mortal and immortal, are crushed out helplessly and forever.

What is said of real but unlawful indulgences, is true of all forms of the artificial; and excesses in the lawful are not the less pernicious, are not the less destructive of body and health, and heart and soul, than are excesses in the unnatural and the unlawful; and in this statement there is a lesson of the very highest practical importance to every reader; hence, one of the grounds for the pains taken in these pages to convince the understanding, that as to the appetites of our nature, barriers should be op-

posed to the too inordinate and too facile opportunities of gratification; and that as to them all, there should be such metes and bounds as the nobler reason may indicate, and as observation and experience may show are proper, healthful and safe. Without wise restraints, as experienced physicians well know, effects, unsuspected by the sufferers themselves, or by their friends, are sometimes induced, which have a deplorable influence on mind and body; as to the latter, wearing it away into hopeless emaciation and decline; and as to the mind, inducing an exaggeration of many of the most undesirable characteristics of our nature; it becomes unsteady, vacillating, fretful, morose and suspicious; self-respect and self-esteem are lost; an intolerable depression weighs down the whole man; hope, and desire, and ambition fail, and relief is madly sought in suicide, the sorrowful verdict being, "Died by his own hand;" a verdict rendered, oftener than many

think for, over the doubly dishonored body; dishonored in the manner of the death, and more deeply still by the degrading causes of it.

Such being some of the results of over-indulgences, thoughtful persons naturally seek for some rule of guidance, and we are not left without an index, without some friendly line of right and safety. Revelation seems to mark out that line, interposes a mete and bound, decides the measure of our gratifications in the comprehensive expressions: "Be ye temperate in all things." "Let your moderation be known to all." If this temperance is not observed, if this moderation is not practiced habitually, persistently, and with a wise, noble, heroic self-denial, the penalty will not fail to be inflicted, pleasure will first lose its keenness, next, it will pall upon the senses, and ultimately fail. In one direction, the power of sleep has been lost; in another, the appetite for food has been lost; and the person becomes the vic-

tim of ills, physical, mental and moral, which make of life a crushing burden, a miserable failure, and a continual curse.

It is to the excessive indulgence of the appetite which leisure and easy opportunity affords in large cities, that family names die out so soon. It is rare in Paris, that the grand-child reaches manhood in vigorous health, if at all, whose parents and grand-parents were born, and lived, and died in that voluptuous capital. The rapid disappearance of family names which were prominent and numerous in New-York in the beginning of the present century, shows that the greatest city in the New World is not behind the greatest of the Old, in the respect named; not owing wholly, it is true, to extravagant indulgences, but largely owing to that, beyond contradiction.

In every direction, idleness and opportunity have led multitudes every where, in the city and in the country, to brutalize themselves. For example, one very common cause of some

of the worst forms of dyspeptic disease, is the not being particularly engaged, while at the same time, some inviting article of food is at hand, in the same room. This has been already referred to; it is the same in relation to drink, and every other form of indulgence, and there is no safety against any of them, but in the interposition of efficient barriers to too facile gratifications, and the more of these a man can erect, the safer will he be, and they are wisest, who use all means for the purpose which can even slightly aid in accomplishing the desired result.

The reflecting reader can here form the requisite rules of action; the first great laws being regularity and temperance; the latter being promoted by not having at hand the easy opportunity of indulgence; by putting temptation out of the way; by cultivating an active and fully occupied life, and by not making it his chief aim and end, to eat, and drink, and enjoy the pleasures which perish in the moment of

their using, but to live for the high and absorbing purpose of human elevation, and of achieving an immortal existence beyond the present scenes. Sight, and propinquity, and touch, bring wants which otherwise would not have sprung up, wants which grow, and strengthen, and overpower, until reason and common-sense are swept away as with a flood, and the reign of unrestraint sets in, to the end of a complete brutalization; and to prevent such results, or any approach to them, the expedient of the book is proposed, as offering a comparatively easy remedy; for a quaint writer says: "When a man has once got into the rapids of Niagara, the next thing he will do, will be to go over the Falls. Having once got in, there is no possibility of getting out. The way for him to escape going over, is not to get into the rapids. When a man has once put a spark to powder, he need not clap his hand upon it to keep it from going off. It will do no good. The only way for him to keep it from going off, is to

keep the spark away from it. Many men can let the cup alone if they keep away from it; who can not, if they go where it is. Many men can abstain from lust, if they do not go within the circuit of its malaria, who can not free themselves from it, after they have once become infected by it. Many men can control their temper, so long as they avoid every thing calculated to arouse it, who have no power over it, after it has once become aroused. Many of our dispositions must be taken care of, beforehand, not afterwards. And when they have led us into wrong courses, our error consists, not in the fact that we could not keep ourselves, but in the fact, that we did not learn enough about ourselves to know that some parts of our nature were not to be exposed; that some parts of our nature must be carried with watching, with vigilant forelooking." The great principle is well put here, that to avoid excesses, we must not put ourselves in the way of a too easy indulgence of what is al-

lowable. If all the evils which arise from any kind of over-indulgence, ended in the persons who practice them, it would be, comparatively speaking, a happy thing; but they are far-reaching in their pernicious influences; they extend beyond those who practice them, and are carried into the ages to come, destined to be a blight on generations yet unborn.

All excesses beget debility of the organs connected with them, and these organs, whether they be the lungs, the stomach, the liver, or any others, will always, under this excessive action or stimulation, prepare a vitiated, imperfect material, diseased and monstrous, according to circumstances. Hence the multitude of weakly, sickly, puny persons, in every direction; muscles flabby, bones slight, face wan, gait unstable, and the whole "physique" an abortion. As to the moral nature, there is a blight over it all—a wanting to be something, without an ability to be any thing—fickle, wayward and unfixed; while in another di-

rection, there are low inclinations, vicious tendencies, degrading practices, and a general lack of all that is high, and noble, and elevating. As to the mind of those begotten in brutalizing indulgences, it is without strength, without persistence of purpose, and without either the capacity or the desire for high culture and exalted aims. Thus the whole nature, physical, moral and mental, is a blight, a blot, a blank.

That the characteristics of the future being, in body, and brain, and heart, are colored by those of the parents, which prevail about the time of reproduction, is conceded by scientific men, and demonstrated by facts. A Massachusetts state paper, on "Lunacy," reports that four fifths of the idiotic children, were those of parents one or both of whom, lived in habits of drunkenness — indicating that children begotten in the stupor of debauch, will have a vacuity of mind for life. On the other hand, it is known that the mother of

the first Napoleon, for months before he was born, accompanied her soldier husband in his martial expeditions, and traversed the country side by side with him on horseback, thus sharing in all his toils. Hannah of old, conceived and carried Samuel, while her whole nature was imbued with a deep religious devotion, under the influence of which she consecrated the future prophet to the supreme service of his Maker. It would seem, then, to be a wise forethought, that perpetuation should be accomplished under favoring conditions of mind and body; the latter in high health, invigorated by a regular, unbroken and refreshing sleep, the blood all pure, by an eight or ten hours' breathing of fresh, luscious, life-giving air; while the former, fully aroused to a sense of high responsibilities, the heart and affections, at the same time, loving and pure, would present a combination of desirable circumstances, which could not possibly be hoped for in any other way

than by the expedient which the idea of the book proposes, whereby every thing could be made a subject of deliberate, thoughtful, and rational calculation, and surprise, in moments of mental, moral and physical unfitness, would be impossible.

BUSINESS AND SLEEP.

It will not be denied that a night of sound, undisturbed sleep, is essential to bodily comfort for the next day, and quite as essential in its renovating influences on the brain, for the proper discharge of the business duties of each; and it can not be gainsaid that separate apartments greatly promote this end.

To provide well for the family, is the first social duty, and it is the absorbing aim of every intelligent and affectionate parent. Such provision falls mainly on the father, and it is of primary importance that when he comes home from the labors of the day, he should be able to retire early, and remain undisturbed

until the morning, that fully refreshed and invigorated as to body and mind, he may be placed in the most advantageous position possible, for the exhibition of that activity and alacrity which are essential to business success. That in moments of weakness, inattention, or want of concentration, men have made mistakes, have fallen into errors of judgment foreign to their general character, by which fortune, and perhaps position too, have been compromised, and their families brought to subsequent deprivation and actual destitution, will not be disputed. That there were causes for such transient mental weakness, is just as true, and that want of sufficient rest and sleep is an adequate cause, is patent to all. Certain it is, that battles have been lost, and the fate of nations decided, for less causes than the want of a good night's sleep. In order to secure this to business men and to laboring men, to the fullest extent, they should have rooms, or at least

beds, to themselves It is of importance, also, to the wife, but not to so great an extent, because she is always at home, and if her sleep is interrupted from any cause during the night, she can take it in the daytime; but the husband is at his business, and it is impracticable. In very many cases, household duties may not allow the wife to retire at an early hour. Ten, eleven, and even twelve o'clock finds some of them barely able to complete their daily round of duties, in consequence, however—in too many cases—of the inexcusable habit of remaining in bed during the precious hours of the early morning. But be that as it may, whether it is actually necessary or not, the effect is the same, to wit, to disturb the sleeper in the first sleep, preventing falling asleep again, in many persons, for hours afterwards—valuable hours utterly wasted. And as similar results occur to both parents, while infant children are growing up, it is in place to propose some

rules in reference to the same; this is especially desirable for the mother's sake first, and that of the child itself, also; for if she has her rest broken, it has a most debilitating effect on the body, and causes great mental irritability or depression, all of which reäct on the body and mind of the child through its natural aliment, and in other ways.

It may be proper, for the first month or two, that the child should sleep in the same bed with its mother, but after that, both will be greatly benefited by separate beds. An infant should not be allowed to sleep for several hours previous to its bed-time, which should be about one hour after sun-down, when it should be fed and put to sleep. When the mother retires, it should be fed again, then if the crib be on the same level with the bed, and close to it with the side let down, the mother can place the child in it without straining herself. At the end of several hours, hun-

ger will wake it up, when it can be nursed, replaced in its crib and sleep soundly until the morning, if it has not been allowed to sleep too long or too late in the afternoon, and thus afford the wearied mother a delicious night's rest, to arise in the morning with a renovated system, refreshed, thankful, and hopeful, and ready to enter on the duties of the day with a light and cheerful heart. On the other hand, in consequence of bad management and a want of system as to the times of eating and sleeping for the nursling, and by keeping it in the same bed with her, it becomes restless, it wakes up a dozen times perhaps in a night, and each time, by some noise or motion rouses the mother, with the result of depriving her of that rest and repose which she so much requires, and the morning finds the body still weary, the mind discouraged and depressed, totally unfitted for the proper discharge of house-

hold duties, as is too plainly indicated by the expression of listlessness and sadness which pervade the features. Indeed, a mother can better afford to eat too little than to sleep too little, but by arranging to have the regularities named carried out for several nights in succession, there will be a happy change in all respects. When a child is six months old, it can safely fast five or six hours if asleep, and, as before, if fed a little before sun-down, it should be put to bed a little later, and not be allowed to take any thing more until the mother retires for the night, which may be about ten o'clock, and if nursed then, it need not be repeated until the morning, thus allowing the mother to have her "first" sleep uninterrupted, a consummation so earnestly desired by many an overtaxed wife, but which she is unable to arrange for want of a little thought, firmness and management. The reader is earnestly requested to make par-

ticular note of it, that the seeds of a life-time suffering, if not an early death, are sown in the constitutions of children by their own mothers during the nursing period. Millions of children die before they are two years old, by a wrong system of feeding, originating in the ignorance of the parents. The instinct and the highest pleasure of the new-born child is to eat, it is the balm for all its cries, it hushes every complaint. The young mother soon finds this out, and putting it to the breast is the panacea for infant fretfulness. But it soon happens that the stomach is overtaxed. A second feeding occurs before the first has been disposed of, the stomach is thus kept working all the time, and soon has not the strength to work any longer, and the food being unacted upon, begins to ferment, turns sour, generates wind and this is the "colic" of infancy. Colic gives pain, pain excites crying, to quiet which, food is given, or

"soothing" syrups are administered, with the inevitable result in all cases, of exaggerating the trouble sooner or later; and in countless instances, there is a speedy and entire breaking down of the system, and death ends the outrage, as to the child, but in the mean while, by reason of the child's sufferings, many a night has been passed in sleeplessness by both parents. Under such circumstances, separate chambers are a necessity, so that at least one of them may have the repose so much needed in the increased demands of the occasion. Under the circumstances, it is fitting here to append a few remarks, as a means of avoiding nightly disturbances, on the

FEEDING OF INFANTS.

For the first few weeks the child may be nursed every two hours, at the beginning of the third week every three hours. When six months old, no good purpose can be

subserved by feeding a child oftener than every four hours, and never between. Hence if fed at sun-down when it it should be put to bed for the night, then fed again when the mother retires four hours later, she will not be waked during the first sleep which does so much good, and only once during the night, and long before the child is two years old, she will have brought it into the habit of not requiring food during the whole night, a consummation which many a mother has earnestly looked for, but not knowing how to bring it about, has fallen into irregularities of nursing, which in the way already described, have entailed life-long injuries, physical, mental and social.

DIFFERENT TEMPERAMENTS SLEEPING TOGETHER.

It is a well-known fact that some persons require more bed-clothing than others; one feels so much oppressed as not to be able

to sleep with an amount of covering which leaves another in so chilly a condition as to make refreshing sleep an impossibility. A high hard bolster is essential to the comfort of one, while another is incommoded by a slight elevation of the head during sleep. There are cases not a few where one person can not sleep with a window up without especial bodily suffering for some time afterwards; others feel as if they would suffocate, or are in a process of certain poisoning, unless the windows are hoisted to their fullest capacity for the admission of an abundant supply of out-door air. In all these varieties of cases, there does not appear to be a better and an easier remedy than that of separate beds and rooms for all.

CHILDREN SLEEPING TOGETHER.

As soon as children reach their seventh year, various good purposes would be subserved by their sleeping apart; indeed, the

neglect of this arrangement has cherished feelings, and has ultimately led to early vicious practices, alike destructive of the health of the body and the purity of the heart—to become, years before adolescence is passed, a source of physical and mental maladies sometimes, from which death itself is a welcomed deliverance.

Here, a branch of the subject opens a field of investigation at once wide and important, but one which requires so much judgment in the handling, that it is a debatable question, whether or not it should be left unexplored. Some have treated the subject, but with such want of discretion, that Carpenter, of England, one of the best physiologists of the age, hesitatingly records his opinion and regret at the evil tendencies of the publications made.

During the later "teens" of youth, certain debilitating occurrences take place in the early morning hours in the rather un-

sound or dreamy sleep which precedes the waking up, which, if allowed to continue unchecked, waste away the vigor and flesh and strength of the body, eventually impairing the mind itself, causing an unaccountable depression of spirits, a distressing nervousness which declines sometimes into a settled stupor or deplorable idiocy; others again become furious maniacs, according to the various constitutions and temperaments of the persons affected.

This malady does not occur to all young or unmarried persons by any means, but it does afflict many to a greater or less extent; not especially hurtful to any, if it does not occur oftener than two or three times a month; that much is perhaps a necessity; beyond that, it soon becomes a disease, with the manifestations already described.

These occurrences take place as a result of nature's exuberance, or as a consequence of practices, of the ill effects of which,

those who engage in them, are most profoundly unconscious. These effects are sometimes traced to their legitimate causes by those who are unusually bright or thoughtful, the practices are at once abandoned, and the effects cease to be observed to any specially hurtful extent. But multitudes of the young never have the practices nor the deplorable results presented to their minds as cause and effect, and hence they continue the practices, and thus aggravate the effects, until the bodily and mental condition are alike pitiable and deplorable. Many parents who have grown up virtuously, witness with deep concern the pallid faces of once ruddy children, the trembling fingers, the averted eye, the thinned flesh, and the melancholy features; on inquiry, the feet are cold, the limbs weak, the body chilly, the appetite indifferent, the general system irregular, and pictures of a deep decline, wake up the affections in the deepest alarm; but nothing is

complained of; there is no pain, no suffering, while both parent and child may be alike unconscious of the existence of the causes of such effects; and while they are hoping for a change for the better to take place, for the renovating influences of the gladdening spring-time, or the bracing power of the coming fall, the malady may have run on to a condition irremediable, and the victim passes to the mad-house or to the grave.

The writer knew a gentleman of wealth, who had two sons; the elder was sent to a distant institution of learning at the age of eighteen years. He was a youth of manly bearing and of high promise. His attainments were unusual for one of his age; an estate was coming to him at his majority, which would yield him a revenue of twenty-three thousand dollars a year. His health began to decline. This was traced to prac-

tices into which he had been inveigled, of which no one could know any thing but himself. He was ignorant of their tendencies, and continued them until the morning debilitations became a drain so exhaustive to the vital powers, that he grew pale and thin and nervous. In a few months his bodily elasticity was gone. In place of the habitual courtesy, the high-bred deportment, and the joyous abandon which once characterized him in a remarkable degree, there was a listlesness of demeanor, a slovenliness of person and dress, with a settled shade of deep melancholy. A mental depression seized upon him, which it seemed impossible to remove by the amusements and diversions which commonly have great attractions for the young. In short, he became idiotic eventually, lost the power of speech, and now for nineteen years has not uttered a single word, nor is it at all like-

ly that he ever will, although thousands are spent every year in vain efforts for his restoration.

Some by the same means fall into consumptive disease and die in a few years; others become insane, and spend their weary lives in a lunatic asylum, or, in a moment of frenzied delirium, end their tortures and their existence by a suicide's guilty hand. Standard medical books abound in such deplorable narrations, but no public good could arise from varied repetitions. The causes and the consequences are the same, and the end uniformly deplorable. A very common cause is allowing children to sleep together, and when once the practices are commenced, sleeping together nourishes and cherishes them until they become an unquenchable and an unappeasable pleasure. There are, however, some so pure-minded, who have been so well brought up by worthy mothers, in being kept away from evil associations, that they

have never learned the pernicious lessons, and learning them intuitively is a bare probability. One of the very best safeguards, in this direction, is never to allow your own children to sleep with the children of others, even for a portion of a single night. Your neighbor may be as pure and blameless as yourself, but never having had the attention directed to the point in question, may have been remiss in the matter of her children's associations, or may have had an overweening confidence in their correctness, by which the taint may have been introduced, and may have grown into a settled habit without any conception of its existence ever having entered the imagination.

While sleeping together generally founds the habits in question, on the part of children and youth, sleeping alone affords the amplest opportunity of unbridled indulgence. Hence, if parents observe a decided manifestation of symptoms which have been enumerated, very

especially if connected with a seeking for solitude, with a desire to be alone, and sleep alone, the best means for ascertaining certainly that such habits exist, and at the same time, without wounding the self-respect, is to occupy the same bed for several nights in succession, in wakefulness, and the manifestations will be made in a most unmistakable manner, either as to the habits or the exhaustions. It is barely possible that a week shall pass without such exhibition. In either case, take your child into your confidence, and without blame or accusation, without any charge of criminality, but in an incidental and affectionate manner, say: "My child, I noticed something last night not uncommon with youth, and as you may not know the nature of it, perhaps it might be best for me to tell you all about it, because sometimes persons become deranged by it, or kill themselves." Then make the communication in such a way that your child may not feel like a criminal, and at the same time, may be deeply impressed with the nature

of the results which will follow a continuance of the practice. If the exhaustions occur without any connection with the practices, as is the case in multitudes of instances, from an exuberance of nature's fires, and hence without an iota of blame to the subject of them, or whether they have arisen from the practices in question, the remedy is the same, which is to adopt such means as will most effectually break up the occurrences, which can be done with comparative ease when the parent and the child work together, without there being any necessity of calling in a physician, which would be more or less embarrassing to all parties.

In using the methods about to be proposed, it is again particularly urged, as an important means of arriving more speedily at valuable practical results, that parents take special pains to show that they do not regard these things as degrading, as the result of criminal influences; for they are not so, necessarily, but simply as an exuberance of nature or of health, over

which the party affected has no control. It will have a good influence in every way, to let it be seen that it is regarded simply as an attack of illness, such as bilious fever, rheumatism, neuralgia, and the like. In this manner, the self-respect of the party is not wounded, and the way is opened for confidences and the interchange of affectionate sympathies, as in the case of other sicknesses, between parents and children, with the result that the means employed will be undertaken with a spirit and hopefulness which would not exist under other circumstances.

It may be proper here to advise parents of the existence of books of a vile character, which are scattered broadcast over the land, under various names, but the general term, 'Physiology," is used to designate them. Under the pretense of explaining the physiology of the parts implicated, the passions and the curiosity are stimulated by illustrations and descriptions, and plates which no person of pro-

per self-respect would ever be seen examining, and which can not possibly fail of having a corrupting and a degrading influence. The reading of such books is fraught with unmixed evil. The first design is to effect a sale of the book, the next is to mislead the reader, to work upon the fears, under the guise of "frankness," and "humanity," and when the mind is wrought up to a pitch of frenzied terror of impossible things, to propose "a remedy efficient and certain in all cases, by reason of the fact that the writer has had a life-time's experience and success, his studies having led him to investigations and remedies, in the prosecution of which a fortunate accident led to a series of discoveries of incalculable value, and that out of sympathy for the misfortunes of the young, this mode of living usefully has presented itself."

Sometimes, a man constitutes himself a "Society," under some other taking designation, "Benevolent," "Humanitarian," and the like,

and advertisements, carefully worded, containing expressions of great charity and disinterestedness, are scattered every where, carrying with them influences and results of a most deplorable character. The young are lured by them, first to apply for a circular or a book, sent, sometimes, absolutely free of all cost, with the expectation, but too frequently realized, that the next thing will be an application for advice. The symptoms are inquired for, then comes a letter enlarging upon the "very dangerous character of the case, but that, possibly, by prompt and very close attention, the evil may be warded off, although it will necessarily be very expensive."

Let it suffice to say, that city physicians are constantly applied to, anonymously, for advice. The general tenor of the letter is, after expressing, in the most lively terms, the mortification and self-abasement felt, with the strongest self-accusatory confessions, to say that having expended ten, fifty, a hundred dollars, and some-

times several hundred, in taking medicines of some individual or society, they find that, if benefited at all, it was but transiently, and that their troubles have returned. But while in correspondence with their wily advisers, great care was taken by them to impress on the mind of their victim the disreputable nature of the ailment, to the following result, in cases not a few: Means have been devised by the victims to procure money in an unauthorized manner; how many "tills" of employers have been invaded; how many parental treasuries have been surreptitiously depleted; how many false representations of needs have been preferred to indulgent and confiding parents, may never be known; but that these things have been done on an extensive scale, and that it has been the first step towards actual crime in many a youth, only ending in the penitentiary or the gallows, is certainly true; and that the number is multitudinous, can not be reasonably questioned for a moment. It could

not be otherwise; the youth is alarmed, and sensitive as the young are to such developments, it is not wonderful that their brains are literally racked with devices to procure the ways and means for meeting the remorseless demands of the "practitioners" named; and that those who have no means of making or earning money, should resort to subterfuges, and to untruthful representations, or to conduct actually criminal, in order to raise the requisite amount, requires no special stretch of the imagination to conjecture. Hence, the judicious use of the suggestions of these pages may save, and will save many a youth from a fate worse than that of death itself.

These pernicious books, with a great show of frankness, give various formulas for making the requisite medicines to be taken; but these are, for the most part, known to be inert. This is adroitly done, for the victim in all cases will certainly try what can be done, in the hope of avoiding the necessity of a confession or exposure, or

the payment of a considerable fee. When, however, the means prescribed fail, the next impression is that it must be a very aggravated and threatening case, and at once the way is prepared for a consultation and the subsequent demand for a high fee.

Let it be distinctly remembered there is no absolute cure for the exhaustions in question short of marriage, old age, or death. There are some remedies which repress them while they are taken, and for a short time after, but the trouble returns, and with it the necessity for renewed applications for advice and remedies, and with them renewed extortions.

No medicines should ever be used by the persons themselves, on their own judgment and responsibility; nor should they be advised by any but the educated physician. Hence, there will be proposed in these pages only such remedial and moral means as can be employed with perfect safety and with an infallible good effect, more or less decided, according to the

fidelity with which they are attended to, and according to the force of character and will of the person employing them.

Let it be remembered that these early morning exhaustions often arise in debility, without any other cause, as swollen feet and ankles arise from debility from various causes, and do not exist of themselves as an evidence of the last stages of consumption, although it is a symptom which generally attends the last stages of that disease, but it is not a "sign" of it, for it exists in other cases of debilitating disease when the lungs are not at all consumptive. The occurrences in question, when excessive, are of themselves simply a "sign" of debility, but greatly aggravate it, and thus they reäct on one another. Debility produces them, they increase the debility, and in process of time a single occurrence so depresses mind and body, that for hours and even days afterward, the mind is utterly incapable of concentrating itself properly on any business, while the body

is absolutely unfit for any efficient employment, except at a sacrifice of its well-being.

But there is another enormity to which attention is specially invited. The remedies employed, which are repressive, are believed by many intelligent medical practitioners to be hurtful if injudiciously used; that is, used too largely, or too long; hurtful to the extent of a life-long disablement; and it is easy to conceive that a young or inexperienced, or reckless, or unprincipled practitioner may be tempted, by a variety of selfish considerations, or be led by actual incapacity, to employ these medicines to the hurtful extent named. Nor is this all. In the event of failure of success, men have been found vile enough to advise as the only means of cure, when marriage was impracticable, unlawful associations, which is but the opening of the flood-gates of vice, leading to the ruin of all that is noble and virtuous and pure; and how greedily the mind would lay hold of the excuse of the necessity of the

thing, backed by the counsels of a medical adviser, all heedless of the utter selfishness of an act which brings a mere conjectural good to self, at the expense of an irreparable ruin to another! No one, it is repeated, can fail to see how willingly the mind would lay hold on such an apology as a satisfactory reason for greedily embracing the tempting alternative. It was in this connection that one of the most eminent medical writers has expressed his "regrets to be obliged to remark that some recent works which have issued from the medical press, contain much that is calculated to excite, rather than to repress the propensity, and that the advice sometimes given by practitioners to their patients is immoral as well as unscientific." And it may be said without exaggeration, that of all the rash and reckless and demented (for the time being) creatures in the universe, the greatest, the highest in the scale is the person who allows a single indulgence out of honorable and legalized wedlock; for one error in

this direction is but the opening of flood-gates as resistless as an Alpine avalanche; it is the lighting up of desires as unsatisfiable and as remorseless as the Norwegian Maëlstrom. And not only so, a single error, committed in a much briefer time than is sufficient to express the sentiment, has been followed, in literally millions of cases, by the most revolting of human maladies, which, when even cured as far as external indications are concerned, still burrows in the system, poisoning the whole blood, and liable at any time to break out again like the smothered fires of a hatch-closed ship, to eat the flesh away, rottening even the bones, until life becomes a drawn-out torture. And in all cases when the system has been once impregnated with the virus, it never being eradicated, however perfect the health may seem to be, the effects are perpetuated to the offspring, to grow up with a worm at the root of life, a poison at the fountains of health, which sends out disease to every fiber of the system, cor-

rupting the blood and vitiating the whole body to such an extent, that it never knows an hour of pure health during its entire existence, although it may drag itself in weariness to the verge of three-score years and ten, literally years of sorrow and suffering! Such are some of the dangers to which the young are deliberately counseled to expose themselves, in the numberless cases where the medical adviser finds that all his vaunted remedies fail of even a temporary cure, and in recklessness and desperation, he counsels the passing of the Rubicon, with the results to the victim just described. And that under the circumstances, and with these views, which are true without exaggeration, it is the duty of every parent to know the position of his child in these regards, can not for one single moment be questioned by any rational mind.

Sometimes mechanical devices are employed, which, while they are grounds for greater

charges, do but increase the mischief in the end, although their certain efficiency and their harmlessness are insisted upon with the most plausible arguments imaginable. "Rings" have been used to a great extent. Enlargement always precedes an exhaustion, which occurs in a state of unsound slumber, early in the morning, when the sleep is nearly out and very little suffices to waken up; if the sleeper is wakened up, the thing is avoided. The ring interferes with the enlargement, and causes pain, and this pain wakens up. But, suppose the sleep to be so sound that there is no waking up, this mechanical interruption of the flow of the blood being still applied, there may be a rupture of important blood-vessels, of internal arteries, causing life-long and irreparable injuries, if not death itself, for any one knows that if the blood be too long arrested in its flow at any point in the body, it must result in dangerous congestions, or in

depriving the part of its natural amount of nourishment, which if continued, must result in its disability or death.

But the wise physiologist will see in an instant, that while its immediate efficiency is undoubted, its ultimate result can only be to increase the evil labored against—thus: during the night water always accumulates in the bladder, and with this, there is the double stimulus of heat and distention, occasioning an increased flow of blood to the parts, which of itself is a powerful excitant; and this blood being detained by the ring, feeds and prolongs the excitement, intensifies it, and hence its inevitable effect is to aggravate the very trouble striven against. In process of time, however, the parts become accustomed to the presence of the ring, become callous to the waking-up pain which was occasioned by it, and it is powerless to waken up any more, hence it is utterly useless, but in the mean

time its employment has generated a habit of increased flow of blood to the parts, and with it, an increase in the frequency of the debilitations, and the body is left helpless against its destroyer.

In all these cases there is a want of vigorous general health, and the very first step, as well as one of the most indispensable, is the employment of means for its improvement, for the very essence of the ailment is debility, which debility it increases, and thus they feed on one another, and grow in power while the body weakens and wilts away under the malign influence. The strictest personal cleanliness must be observed. The whole body should be scrubbed with a brush, soap and warm water, once a week at bed-time, with a cold instantaneous shower-bath immediately after, which shower-bath should be repeated every morning, whether in winter or summer, the very first thing after getting out

of bed, the whole operation to be completed within five minutes ordinarily, and in winter, within two minutes, if practicable.

Next to personal cleanliness, is the necessity of eating, regularly and temperately, plain, nourishing, well-cooked, unstimulating food, using absolutely nothing as a beverage or a drink, but cold water, and that not in quantities greater than an ordinary tea-cupful at meal-times, and none within an hour after eating; at other times, as much cold water may be drank as the appetite calls for. If a person is easily chilled, or has not much stamina, it would be better to take, in place of a half-glass of cold water at meal-time, a tea-cupful of hot milk and water, with or without sugar.

Nothing whatever should be eaten between meals under any pretense whatever. Breakfast should be made of the drink above named, with cold or well-toasted bread and butter and baked apples, and nothing else, except, as an

occasional substitute, one or two soft-boiled eggs, or some fish, or a piece of well-broiled fresh meat of any kind. Dinner, take whatever the appetite calls for, of plain food, without sauces or spices or condiments of any kind, using as a dessert baked or stewed or ripe apples, or in their place—in their season, —melons, berries, oranges and the like. Supper, that is, the last meal of the day, should be taken not later than an hour after sun-down, and should consist of nothing but some cold bread and butter with a cup of hot milk and water. An arrangement of this kind will seldom fail, within a week, of causing a vigorous appetite for breakfast and dinner, while by taking but little supper, the stomach is allowed to rest while the other part of the body is doing the same thing, and more undisturbed and refreshing sleep is a natural consequence.

To promote the restoration to more vigorous health still further, two or three hours in the

forenoon and one or two in the afternoon should be spent in the open out-door air, in moderate bodily activities, in some employment which involves muscular motion, and if combined with mental interest of a pleasurable character, so much the better. Very little good need be anticipated from mere mechanical exercise, which involves no other interest than that of accomplishing a specified amount; the mind should be engaged, not merely pleasurably, but in a manner which shall interest it, to the extent of calling out its power in some degree, and thus diverting it from the intention of the thing, as well as from the bodily conditions, which these exercises are intended to change or remove or favorably effect. Hence if it is at all possible, considering what human nature is, the activities should be pecuniarily remunerative, and if liberally so, it is that much the better. But to be more full as to the means of improving the general health, which indeed is the safest and surest

way of removing a variety of bodily ailments, it may be well to treat in detail as to EATING, DRINKING, SLEEPING, REGULATING THE BOWELS, and ATTENTION TO THE FEET.

EATING.

Before a man becomes hungry, watchful nature has calculated, in her way, how much nutriment the body needs, and provides as much of a liquid substance as will be necessary to prepare from the food which may be eaten that amount of sustenance which the system may require. When this is stored up, and all is ready, the sensation of hunger commences, and increases with the steadily increasing amount of the digesting material just referred to, and the very instant the first mouthful of food is swallowed, this "gastric juice" is poured out into the stomach through a thousand sluices; but no more has been prepared than was necessary, for Nature does nothing in vain; so that if a single mouthful

more of food has been swallowed than the untempted or unstimulated appetite would have called for, there is no gastric juice for its solution, and it remains but to fret and worry and irritate for hours together. If the amount eaten is much in excess, the stomach, as if in utter discouragement at the magnitude of its task, ceases its attempts at digestion, and forthwith commences the process of ejecting the unnatural load by means of nausea and vomiting in some cases; in others, it remains for an hour or more like a weight, a hard round ball, or a lump of lead, an uneasy heaviness; then it begins to "sour," that is, to decompose, to rot, and the disgusting gas or liquid comes up into the throat, causing more or less of a scalding sensation from the pit of the stomach to the throat; this is called "heartburn." At length, the half-rotted mixture is forced out of the mouth by the outraged stomach with that horrible odor and taste with which every glutton is familiar. In some cases the stenchy mass is passed out of the stomach downwards,

causing, in its progress, a gush of liquid from all parts of the intestinal canal, to wash it, with a flood, out of the system; this is the "Diarrhea" which surprises the gourmand at midnight or in the early morning hours, when a late or over-hearty meal has been eaten. When sufficient food has been taken for the amount of gastric juice supplied, hunger ceases, and every mouthful swallowed after that, no gastric juice having been prepared for its dissolution, remains without any healthful change, inflaming, and irritating, and exhausting the stomach by its efforts to get rid of it, and this is the first step towards forming "dyspepsia," which becomes more and more deeply fixed by every repeated outrage, until at length it remains a life-time worry to the mind, filling it with horrible imaginings, and a wearing, wasting torture to the body, until it passes into the grave.

The moral of the article is, that the man who "forces" his food, he who eats without an inclination, and he who strives by tonics, or

bitters, or wine, or other alcoholic liquors, to "get up" an appetite, is a sinner against body and soul—a virtual suicide!

The stomach has two doors, one for the entrance of the food, on the left side; the other, for its exit, after it has been properly prepared for another process. As soon as the food is swallowed, it begins to go round and round the stomach so as to facilitate dissolution; just as the melting of a number of small bits of ice is expedited by being stirred in a glass of water; the food, like the ice, dissolving from without, inwards, until all is a liquid mass.

Eminent physiologists have said, that as this liquid mass passes the door of exit, where there is a little movable muscle, called the Pyloric Valve, (a faithful watchman,) that which is fit for future purposes gives a tap, as it were; the valve flies open and it makes an honorable exit. Thus it goes on until the stomach is empty, provided no more food has been taken than there was a supply of gastric

juice for. If a mouthful too much has been taken, there is no gastric juice to dissolve it; it remains hard and undigested; it is not fit to pass, and the janitor refuses to open the door; and another and another circuit is made, with a steady refusal at each time, until the work is properly done. Boiled rice, roasted apples, cold raw cabbage cut up fine in vinegar, tripe prepared in vinegar, or souse, pass through in about an hour; fried pork, boiled cabbage and the like, are kept dancing around for about five hours and a half.

After, however, there has been a repeated refusal to pass, and it would appear that any longer detention was useless, as in the case of indigestible food, or a dime, or cent, or fruit-stone, the faithful watchman seems to be almost endowed with intelligence, as if saying: "Well, old fellow, you never will be of any account; it is not worth while to be troubled with you any longer; pass on, and never show your face again."

When food is thus unnaturally detained in the stomach, it produces wind, eructations, fullness, acidity, or a feeling often described as a "weight," or "load," or "heavy." But nature is never cheated. Her regulations are never infringed with impunity; and although an indigestible article may be allowed to pass out of the stomach, it enters the bowels as an intruder, is an unwelcome stranger; the parts are unused to it, like a crumb of bread which has gone the wrong way by passing into the lungs, and nature sets up a violent coughing to eject the intruder. As to the bowels, another plan is taken, but the object is the same — a speedy riddance. As soon as this unwelcome thing touches the lining of the bowels, nature becomes alarmed, and like as when a bit of sand is in the eye, she throws out water, as with the intention of washing it out of the body; hence the sudden diarrheas with which two-legged pigs are sometimes surprised. It was a desperate effort of nature

to save the body, for if undigested food remains too long, either in the stomach or bowels, fits, convulsions, epilepsies, apoplexies and death, are a very frequent result. Inference: *Always eat slowly and in moderation of well-divided food.*

As a universal rule in health, and, with very rare exceptions, in disease, that is best to be eaten which the appetite craves or the taste relishes.

Persons rarely err in the quality of the food eaten; nature's instincts are the wise regulators in this respect.

The great source of mischief from eating are three: Quantity, Frequency, Rapidity; and from these come the horrible dyspepsias which make of human life a burden, a torture, a living death.

RAPIDITY.—By eating fast, the stomach, like a bottle being filled through a funnel, is full and overflowing before we know it. But the most important reason is, the food is swallowed

before time has been allowed to divide it in sufficiently small pieces with the teeth; for, like ice in a tumbler of water, the smaller the bits are, the sooner are they dissolved. It has been seen with the naked eye, that if solid food is cut up in pieces small as half a pea, it digests almost as soon, without being chewed at all, as if it had been well masticated. The best plan, therefore, is for all persons to comminute their food; for even if it is well chewed, the comminution is of no injury, while it is of very great importance in case of hurry, forgetfulness, or bad teeth. Cheerful conversation prevents rapid eating.

FREQUENCY.—It requires about five hours for a common meal to be dissolved and pass out of the stomach, during which time this organ is incessantly at work, when it must have repose, as any other muscle or set of muscles, after such a length of effort. Hence persons should not eat within less than five hours' interval. The heart itself is at rest more than

one third of its time. The brain perishes without repose. Never force food on the stomach.

All are tired when night comes; every muscle of the body is weary, and looks to the bed; but just as we lie down to rest every other part of the body, if we, by a hearty meal, give the stomach five hours' work, which, in its weak state, requires a much longer time to perform than at an earlier hour of the day, it is like imposing upon a servant a full day's labor just at the close of a hard day's work; hence the unwisdom of eating heartily late in the day or evening; and no wonder it has cost many a man his life. Always breakfast before work or exercise.

No laborers or active persons should eat an atom, later than sun-down, and then it should not be over half the mid-day meal. Persons of sedentary habits or who are at all ailing, should take absolutely nothing for supper beyond a single piece of cold stale bread and

butter, or a ship-biscuit, with a single cup of warm drink. Such a supper will always give better sleep and prepare for a heartier breakfast, with the advantage of having the exercise of the whole day to grind it up and extract its nutriment. Never eat without an inclination.

QUANTITY.—It is variety which tempts to excess; few will err as to quantity who will eat very slow. Take no more than a quarter of a pint of warm drink, with a piece of cold, stale bread and butter, one kind of meat, and one vegetable, or one kind of fruit. This is the only safe rule of general application, and allows all to eat as much as they want.

Cold water at meals instantly arrests digestion, and so will much warm drink; hence, a single tea-cup of drink, hot or cold, is sufficient for any meal.

For half an hour after eating, sit erect, or walk in the open air. Avoid severe study or deep emotion, soon after eating. Do not sit

down to a meal under great grief or surprise, or mental excitement.

DRINKING.

MAN is the only animal that drinks without being thirsty, swallowing whole quarts of water when nature does not call for it, with the alleged view of "washing out" the system. When persons are thirsty, that thirst should be fully assuaged with moderately cool water, drank (in summer time or under great bodily heat or fatigue) very leisurely, but not within half an hour of eating a regular meal. Eminent physiologists agree that drinking at meals, dilutes the gastric juice, diminishes its solvent power, and retards digestion, especially, if what is drank is cold. Persons in vigorous health, and who work or exercise a great part of every day in the open air, may drink a glass of water, or a single cup of weak coffee or tea, at each meal, and live to a good old age. But it is very certain that sedentary persons and in-

valids can not go beyond that habitually, with impunity. The wisdom of such consists in drinking nothing at all at the regular meals beyond a swallow or two at a time of some hot drink of a mild and nutritious character. Feeble persons will be benefited by hot drinks, because they warm up the body, excite the circulation, and thus promote digestion, if taken while eating, and not exceeding a cupful.

Cold water ought never to be drank within half an hour of eating; for the colder it is, the more instantly does it arrest digestion, not only by diluting the gastric juice, but by reducing its temperature, which is near one hundred degrees. Ice-water is something over thirty-two degrees, and, when swallowed, mixes with the gastric juice, and lowers its temperature, not to be elevated until heat enough has been withdrawn from the general system; and that draft must be made until the hundred degrees of warmth are attained; but some persons have so little vitality, that the body exhausts itself in

its instinctive efforts to help the stomach, from which its life and strength come; and the person rises from the table with a cold chill running down the back or over the whole body. Sometimes, these drafts upon the body for warmth to the stomach are so sudden and great, that they can not be met, and instantaneous death is the result. Many a person has dropped dead at the pump or at the spring; such a result is more certain if, in addition to the person being very warm at the time of drinking, there is also great bodily fatigue. A French general recently fell dead from drinking cold water on reaching the top of a mountain over-heated and exhausted in the effort of bringing up his battalions with promptitude. Under all circumstances of heat or fatigue, the glass of water should be grasped in the hand, held half a minute, then, taking not over two swallows, rest a quarter of a minute; then, two swallows more, and so on, until the thirst is *nearly* assuaged. It will seldom happen that a

person is inclined to take over half a dozen swallows thus.

No case is remembered in the practice of a quarter of a century, where malt liquors, wines, brandies, or any alcoholic drinks whatever, have ever had a permanent good effect in improving the digestion. Apparent advantages sometimes result, but they are transient or deceptive. If there is no appetite, it is because nature has provided no gastric juice; and that is the product of nature, not of alcohol. If there is appetite, but no digestive power, liquor no more supplies that power than would the lash give strength to an exhausted donkey. If torture does arouse the sinking beast, it is only that it shall fall a little later into a still greater exhaustion from which there is no recovery; so with the use of liquor and tobacco as whetters of the appetite, when, at length, the desire for the accustomed stimulus ceases, and the man "sickens;" there is no longer a relish for the dram and the chew, and life fades apace, either

in a stupor from which there is no awaking, or by wasting and uncontrollable diarrhea.

SLEEPING.

INABILITY to sleep is the first step toward madness, while sound and sufficient sleep imparts a vigor to the mind, and a feeling of wellness and activity to the body, which are beyond price. To be able to go to sleep within a few minutes of reaching the pillow, and to sleep soundly until the morning breaks, and to do this for weeks and months together, is perfectly delightful. How such a thing may be brought about, and kept up, as a general rule, is certainly well worth knowing, and will be appreciated, even by those who have lost but half a night's sleep. The reader can study out the reasons of the suggestions at his leisure.

Both in city and country, the chamber should be on the second, third, or higher floor; its windows should face the east or south, so as to have the drying and purifying influences

of the blessed sun-light; there should be no curtains to the bed or windows, nor should there be any hanging garments or other woven fabrics, except the clothes worn during the day, each article of which should be spread out by itself, for the purpose of thorough airing. There should be no carpet on the floor of a sleeping-room, except a single strip by the side of the bed, to prevent a sudden shock by the warm foot coming in contact with a cold floor. Carpets collect dust and dirt and filth and dampness, and are the invention of laziness to save labor and hide uncleanness.

Ordinarily, mattresses of shucks, chaff, straw, or curled hair are best to sleep upon. For old persons and those of feeble vitality, there is nothing better than a clean feather-bed. No one can sleep well if cold. Have as little covering as possible from just above the knees upwards, but cover the legs and feet abundantly, for by keeping them warm, the blood is

withdrawn from the brain, and to that extent dreaming is prevented.

There should be no standing fluid of any description, nor a particle of food or vegetation or any decayable substance allowed to remain in a bed-room for a moment; nor should any light be kept burning, except from necessity, as all these things corrupt the air which is breathed while sleeping.

The entire furniture of a chamber should be the bed, two or three wooden chairs, a table, and a bureau or chest of drawers. Every article of bed-clothing should be thrown over a chair or table by itself, and the mattress remain exposed, until the middle of the afternoon; not later, lest the damps of the evening should impregnate them. From morning until afternoon of every sunshiny day, the windows of the chamber should be hoisted fully. The fireplace should be kept open, at least during the night, thus affording a draught from the crevices of doors and windows. As foul air is lightest

in warm weather, it is best that the sash should be let down at the top several inches, and the lower one elevated quite as much; by this means the pure and cool air from without enters and drives the heated, impure air upwards and outwards.

In a very cold room, without a good draught or ventilation, carbonic acid being generated by the sleeper, becomes heavy and falls to the floor; this gas has no nourishment for the lungs, and to breathe it wholly for two minutes is to die; it is this which causes suffocation in descending some wells. In summer it goes to the ceiling, in winter to the floor; hence it is more important that a sleeping room should have a very gentle current of air in winter than in summer.

Never go to bed with cold or damp feet, else refreshing sleep is impossible; but spend the last five or ten minutes before bed-time, at least in firetime of year, in drying and heating the feet before the fire, with the stockings off. In-

dians and hunters sleep with their feet towards the camp-fire.

Different persons require different amounts of sleep, according to age, sex, and occupation. Nature must make the appointment, and will always do it wisely and safely; and there is only one method of doing it. Do not sleep a moment in the day, or if essential do not exceed ten minutes, for this will refresh more than if you sleep an hour, or longer. Go to bed at a regular early hour, not later than ten, and get up as soon as you wake of yourself in the morning; follow this up for a week or two, and if there is no actnal disease, nature will always arouse the sleeper as soon as enough sleep has been taken to repair the expenditures of the preceding day, a little more or less in proportion to the amount of bodily and mental effort made the day before. Commonly there will be but a few minutes' difference for weeks together. It is not absolutely neces-

sary to get up and dress, but only to avoid a second nap. Sometimes it is advantageous to remain in bed until the feeling of tiredness, with which most persons are familiar, has passed from the limbs. It is safest and best for all to take breakfast before going out of doors in the morning, whether in summer or winter, most especially in new, flat, or damp countries, as a preventive of chill and fever.

If from any cause you get up during the night, throw open the bed-clothes, so as to give the bedding an airing, and also with the hands give the whole body a good rubbing for a minute or two; the effect will be an immediate feeling of refreshment, and a more speedy falling to sleep again. This was Franklin's remedy in case of restlessness at night.

When it is remembered that one third of our whole time is spent in our chambers, and that only uncorrupted air can complete

the process of digestion and assimilation and purify the blood, it is most apparent that the utmost pains should be taken to secure the breathing of a pure atmosphere during the hours of sleep; and that the most diligent attention in this regard is indispensable to high health.

REGULATING THE BOWELS.

It is best that the bowels should act every morning after breakfast; therefore, quietly remain in the house, and promptly attend to the first inclination. If the time passes, do not eat an atom until they do act; at least not until breakfast next day, and even then, do not take any thing except a single cup of weak coffee or tea, and some cold bread and butter, or dry toast, or ship-biscuit.

Meanwhile, arrange to walk or work moderately, for an hour or two, each forenoon and afternoon, to the extent of keep-

ing up a moisture on the skin, drinking as freely as desired as much cold water as will satisfy the thirst, taking special pains, as soon as the exercise is over, to go to a good fire or very warm room in winter, or if in summer, to a place entirely sheltered from any draught of air, so as to cool off very slowly indeed, and thus avoid taking cold or feeling a "soreness" all over next day.

Remember, that without a regular daily healthful action of the bowels, it is impossible to maintain health, or to regain it, if lost. The coarser the food, the more freely will the bowels act, such as corn (Indian) bread eaten hot; hominy; wheaten grits; bread made from coarse flour, or "shorts;" Graham bread; boiled turnips, or stirabout.

If the bowels act oftener than twice a day, live for a short time on boiled rice, farina, starch, or boiled milk. In more aggravated cases, keep as quiet as possible on

a bed, take nothing but rice, parched brown like coffee, then boiled and eaten in the usual way; meanwhile drink nothing whatever, but eat to your fullest desire bits of ice swallowed nearly whole, or swallow ice-cream before entirely melted in the mouth; if necessary, wear a bandage of thick woolen flannel, a foot or more broad, bound tightly around the abdomen; this is especially necessary if the patient has to be on the feet much. All locomotion should be avoided when the bowels are thin, watery, or weakening. The habitual use of pills, or drops, or any kind of medicine whatever, for the regulation of the bowels, is a sure means of ultimately undermining the health, in almost all cases laying the foundation for some of the most distressing of chronic maladies; hence all the pains possible should be taken to keep them regulated by natural agencies, such as the coarse foods and exercises above named.

ATTENTION TO THE FEET.

It is utterly impossible to get well or keep well, unless the feet are kept dry and warm all the time. If they are for the most part cold, there is cough, or sore throat, or hoarseness, or sick headache, or some other annoyance.

If cold and dry, the feet should be soaked in hot water for ten minutes every night, and when wiped and dried, rub into them well ten or fifteen drops of sweet oil; do this patiently with the hands, rubbing the oil into the soles of the feet particularly.

On getting up in the morning, dip both feet at once into water, as cold as the air of the room, half-ankle deep, for a minute in summer; half a minute or less in winter, rubbing one foot with the other, then wipe dry, and if convenient, hold them to

the fire, rubbing them with the hand until perfectly dry and warm in every part.

If the feet are damp and cold, attend only to the morning washings, but always at night remove the stockings and hold the feet to the fire, rubbing them with the hands for fifteen minutes, and get immediately into bed.

Under any circumstances, as often as the feet are cold enough to attract attention, draw off the stockings and hold them to the fire; if the feet are much inclined to dampness, put on a pair of dry stockings, leaving the damp ones before the fire to be ready for another change.

Some persons' feet are more comfortable, even in winter, in cotton, others in woolen stockings. Each must be guided by his own feelings. Sometimes two pair of thin stockings keep the feet warmer than one pair which is thicker than both. The thin pair may be of the same or of different mate-

rials, and that which is best next the foot should be determined by the feelings of the person.

Sometimes the feet are rendered more comfortable by basting half an inch thickness of curled hair on a piece of thick cloth, slipping this into the stocking, with the hair next the skin, to be removed at night and placed before the fire to be perfectly dried by morning.

Persons who walk a great deal during the day, should, on coming home for the night, remove their shoes and stockings, hold the feet to the fire until perfectly dry, put on a dry pair, and wear slippers for the remainder of the evening.

Boots and gaiters keep the feet damp, cold, and unclean, by preventing the escape of that insensible perspiration which is always arising from a healthy foot, and condensing it; hence the old-fashioned low shoe is best for health.

But coming to more direct agencies for preventing morning debilitations, and recapitulating somewhat in reference to the procurement of sound sleep, in view of its primary importance as a remedial means, as an aid in making it sound and connected, it being known that the exhaustions occur in the unsound sleep of the later part of the morning, often during the "second nap," as it is called, it may be added that persons who sleep in the daytime, and thus render the sleep of night less deep, are more troubled with these things. By going to sleep at a regular early hour, say not later than ten o'clock, by not sleeping a moment in the daytime, and by being regularly waked up at the end of seven hours, which is about as much as persons usually require, the sleep would, generally, in a week be sound, deep, connected, and refreshing, up to the last moment of waking; and thus, by removing the chance of unsound sleep, the occurrence would be broken up without further effort, in cases not particularly ag-

gravated. The aid of an alarm-clock may be necessary sometimes to waken up persons, but within a week or two, nature loves regularity so much she would waken up the body within a few minutes of the time, if only the habit were persistently followed of getting up at the very first moment of waking, or at least, by a strong exercise of the will, avoiding a second nap; for it is this, by the unsoundness of the sleep, which gives rise to dreams, that precipitates the trouble, in a very great degree.

Pains should be taken to keep the mind engaged during the day in the important affairs of life, and to avoid exciting subjects of thought and feeling at the close of the day. As urinary accumulations during the night are sources of unhealthful stimulation, the bladder should be emptied the very last thing on going to bed; and if the person could be waked up about two o'clock in the morning, or every third hour, to do the same thing, it would very

greatly promote the object in view. This is an important suggestion.

The bed-chamber should be large and well ventilated, and every thing done to promote coolness of the body; a hard bed, with a hair or straw mattress, is indispensable, with as little covering on the upper portion of the body as consistent with comfortable warmth, while from the middle of the thighs downwards, there should be an abundance of covering, so that by keeping the feet quite warm, the blood will be diverted thereto, and thus be productive of important results. If these things do not avail, it is recommended to sleep on the floor, with nothing under the person but a "comfortable," or a common blanket and sheet doubled. When these things also fail, there remains but one of two safe alternatives, either marriage or the consultation of a physician of known ability and of high character; but the latter aid can only benefit to the extent of a temporary expe-

dient, and should be regarded as a means of gaining time for a better preparation for marriage, which, after all, is the great purifier, the divinely-appointed means for happifying humanity, and for perpetuating the race in health and vigor and prosperity, and which every prudent and wise parent should use all practicable means for encouraging at an early age, not later than twenty-five; it is the honorable safeguard against many ills, and one which every affectionate and considerate parent should endeavor to throw around the young as a matter of high duty, imposed by the very nature of things.

That all the pains named should be taken by parents for the correction of the troubles in question, it ought to be a sufficient, an overwhelming argument, that mental aberration in some form is a frequent result of a neglect of the same, either lunacy or the more terrible condition of being a hopeless, driveling idiot. On the seventeenth day of July, eighteen hun-

dred and sixty, a man died in the hospital in Dublin, Ireland, which was founded by Dean Swift, (himself crazed in later years, and with great certainty, as a result in one way or another of not having married in early life,) at the age of one hundred and six years, having been an inmate of the institution since May the twenty-eighth, eighteen hundred and two, a period of fifty-eight years. It is literally terrible for a parent to contemplate the possibility of his child, so loved now, spending more than half a century in the dreary walls of an asylum, behind grates and bars of iron, in cold, cheerless, and dreary apartments, never enlivened in all that time by one single smile of parent, brother, friend! And how often in the mean while to be neglected, to be maltreated, to be brutalized over by hired officials, upon whose hearts pure pity never made an impress, who can say?

After all, one of the most efficient aids in breaking up the occurrences in question is force

of will, an iron determination to compel the mind to subjects and objects which are of so much interest as to direct the greater flow of the nervous energies to the brain, or to engage in severe manual labor. Really great students and hard workers in mechanics, handicrafts, and fields are not much troubled in this direction ; those most suffer who have idle time on their hands, or whose employments permit several hours of leisure, sufficient to allow nervous influences to be directed to unmeet subjects. Mere manipular occupations are not the best, such as writing, or other exercises, which can be performed while the mind can run riot in other directions. Let it be remembered that in any successful treatment this force of will, strength of character, mental diversion will be found of very great advantage. And when the serious nature of the ailment is taken into consideration, and the large bearings it has upon the happiness and well-being of those who are under its influence, all means should be resorted

to which will have even a slight influence in breaking up the evil.

Sleeping on the back increases the trouble; hence whatever means are used to promote sleeping on the side, should be adopted, which, indeed, ought to be done, for the benefits to be derived in other directions. It is believed that no one has nightmare who sleeps on the side. If one falls asleep on the right side, it favors the passage of the food from the stomach, which there opens into the lower bowels, represented by the greater ease with which water is removed from a bottle by holding it upside down, than if, when held in its natural position, it is drawn upwards. On this principle the expedient of attaching a ball or block of wood to the back has been adopted by some.

To *compel* the exhaustive use of the means named, no medicine is advised. In the rare cases where drugs are necessary, consult an honorable and educated physician. As to roomy apartments, it is well to record some

suggestions as to the propriety of introducing dwelling-houses in the larger cities of the United States on the European system, in reference to which J. R. Hamilton, of New-York, has said that

"The very great difficulty experienced by families of moderate means, in attempting to obtain economical and convenient residences, easy of access, in the city of New-York, is felt and acknowledged by so large and respectable a portion of the community, that I hope the importance of the subject will be a sufficient apology for my venturing to intrude upon your valuable space.

"After devoting long and serious attention to this matter, I have prepared a plan which I take the liberty of submitting to your inspection, and which, I think, will be found capable of supplying, to some extent, what has been so long desired. I claim no especial novelty for my scheme; nor should it be considered in the light of an experiment, for it is simply an adaptation of the well-known and convenient system of living in what are called '*flats*,' so common among families of the best standing in Paris,

Edinburgh, and most of the large cities of Europe.

"You will observe that although there is but one general entrance and grand central staircase to my building, the inmates have each a *private entrance-door and vestibule* from the common landings on each floor, and are consequently as much cut off from all communication with each other as if they really inhabited houses under separate roofs. The main entrance and staircase, which are intended to be as private and well-kept as those of any private mansion, (and there is nothing in the exterior to distinguish it from that of any first-class private residence,) are, nevertheless, to those who enter, nothing more than a continuation of the sidewalk. On arriving at their destination, be it on the first or fourth floor, visitors will come to the private vestibule entrance of a gentleman's house, and will have to ring the bell before gaining admission, precisely as they would have to do in the street. This is what forms the essential difference between such a building as I propose, and associated houses of any description hitherto erected in New-York—at any rate, to my knowledge. By my plan there can be

no intrusion whatever upon one's privacy, no unpleasant and inevitable commingling of families, any more than among people living next door to each other on the same block.

"If you examine the plans, you will find that, upon an ordinary double lot of fifty feet by one hundred feet, I give to each dwelling or *flat*, of which there are eight in my building, (two to each floor,) the following accommodation: A large front parlor, four good bed-rooms, dining-room with china-closet, kitchen, and kitchen pantry, bath-room and two water-closets, a wide covered piazza in the rear, abundance of closets and every other household convenience, and my rooms are all thoroughly ventilated, and lit by *direct* lights. In the rear I have provided a staircase inclosed by brick walls, not only for thorough security in case of fire, but giving access from each dwelling to a separate laundry and coal-cellar provided for each in the basement, and having direct access to the back-yards. In the basement are also rooms for the janitor and his family, and two large double offices which would rent well to physicians and others in any good locality. The kitchen department is so arranged that fuel can be brought

up by a lift from below, and all kitchen refuse descend to one common receptacle (to be daily removed by the janitor) without the necessity of any one going down a single step. The building is calculated to be thoroughly supplied with all the usual modern improvements of our best dwellings.

"After a careful calculation of the cost of such an edifice, including the ground, I am prepared to prove that with rentals varying from five hundred dollars for the first to three hundred dollars for the fourth floor, such a building would yield, if erected in one of our best neighborhoods, a profit of at least ten per cent upon the outlay. I shall be glad if, through the instrumentality of the press, the attention of some of our builders and capitalists can be seriously and practically directed to this important question. I think it can clearly be shown that whoever undertakes to supply the demand to which I have alluded, will speedily find his account in it among hundreds of our citizens of the highest respectability, who are at this moment undergoing all sorts of annoyances and inconvenience in vain attempts to obtain private, economical, and suitable homes for their families."

In the same direction the author of that excellent treatise on the "Uses and Abuses of Air" has communicated to the editors of the *Scientific American* an improved method of ventilation, and which has been introduced into the dwelling of one of the prominent citizens of New-York, in reference to which the editors remark:

"This plan for ventilating houses, suggested and put in execution by Dr. J. H. Griscom, of New-York, received the sanction of the Third National Quarantine and Sanitary Convention, held in this city. It pertains to the chemical method, the motive power of the air being heat, but requiring no extra expenditure of fuel, the heat used for the purpose being only the waste heat of the furnace by which the house is warmed. The arrangement consists in the construction of independent ventilating flues in the walls of the house, in proximity to the hot-air tubes, so that the two may be connected together by means of a lateral or branch tube, by which a current of hot air may, at any desired moment, be transmitted from the hot air

tube to the ventilating flue. By this means, the ventilating flues, which terminate in the open air like an ordinary chimney, will be warmed by the hot air from the furnace, when the ordinary hot-air register is closed, as at night in a dwelling, or in a school-house after school hours.

"If properly constructed of brick or smooth stone, the walls of the flue will, after a current of hot air has passed through it a short time, become sufficiently heated to rarefy the air within, thus giving the flue a good ventilating power, even after the current of hot air has been withdrawn. For example, if the hot-air register of a parlor be closed at ten o'clock at night, and the heat, instead of being thrown back into the furnace, is allowed to pass through the lateral tube into the ventilating flue, and so continue till six the next morning, it is evident that, during those eight hours, the interior of the ventilating flue must become thoroughly heated, so that the next day, when the current of hot air is restored to the parlor, the heated sides of the ventilating flue will continue to rarefy the air within them for many hours, and perhaps even days afterwards.

"There being no danger of a reaction of the air of the flue through the ventilating register, (as is the case when ventilating openings are made in ordinary fire-flues,) connections with the apartment to be ventilated may be made at any point, and even carried to the opposite side of the house, between the beams of the ceiling, to ventilate distant apartments. Dr. Griscom's method has the advantage of being applicable to all edifices warmed by hot air furnaces of any description, which, in general, are those most needing ventilation. This arrangement may be introduced into many houses already erected, by connecting the hot-air tubes with such of the ordinary chimney-flues as are not used with fire.

"One of the principal advantages appertaining to this plan, is the capability of having a large number of ventilating-flues put in connection with the furnace. In fact, the number may correspond with the number of hot-air registers, and thus any desirable amount and extent of ventilation be obtained."

Some have gone farther in their benevolences than to advocate roomy and well-

ventilated sleeping apartments for their fellow men. The interests of the noble horse are thus pleaded for by a recent writer:

"Most stables are built low 'because they are warmer.' But such people forget that warmth is obtained at a sacrifice of the health of the animal and pure air. Shut a man up in a tight, small box. The air may be warmed, but it will soon lay him out dead and cold if he continues to breathe it. If stables are tight, they should have high ceilings; if they are not tight, but open to the admission of cold currents of air from all directions, they are equally faulty. A stable should be carefully ventilated, and one of the cheapest of modes is to build a high one."

The whole subject finds a powerful illustration, in one direction at least, in the discoveries which the celebrated traveler, Doctor Krapf, has recently made in the interior of Africa, where he has found a nation of people of whose existence the civilized world never heard, until the year eighteen hundred and fifty-nine or sixty,

showing that with social habits of the most degraded and brutalizing character, "diseases are never known among them; they die only of old age, or through the assaults of their enemies." The only redeeming circumstance, the only great influence antagonistic of unheard-of degradations as to social habits, and which can at all account for the fact even in part, that "sickness is unknown," is in the declaration that they have neither houses nor tents, have no covering but the trees and the sky. To make it more satisfactory, the exact words of the traveler are given:

"To the south of Kaffa and Susa, there is a very sultry and humid country, with many bamboo woods, inhabited by the race called Dokos, who are no bigger than boys of ten years old; that is, only four feet high. They have a dark, olive-colored complexion, and live in a completely savage state, like the beasts; having neither houses, temples, nor holy trees, like the Gallas, yet possessing something like

an idea of a higher being called Yer, to whom in moments of wretchedness and anxiety they pray—not in in an erect posture, but reversed, with the head on the ground and the feet supported upright against a tree or stone. In prayer they say: 'Yea, if thou really dost exist, why dost thou allow us to be slain? We do not ask thee for food and clothing, for we live on serpents, ants, and mice. Thou hast made us, why dost thou permit us to be trodden under foot?' The Dokos have no chief, no laws, no weapons; they do not hunt, nor till the ground, but live solely on fruits, roots, mice, serpents, ants, honey, and the like, climbing trees and gathering the fruits like monkeys, and both sexes go completely naked. They have thick, protruding lips, flat noses, and small eyes; the hair is not woolly, and is worn by the women over the shoulders. The nails on the hands and feet are allowed to grow like the talons of vultures, and are used in digging ants, and in tearing to pieces the serpents, which they devour raw, for they are unacquainted with fire. The spine of the snake is the only ornament worn round the neck, but they pierce the ears with a sharp-pointed piece of wood.

"The Dokos multiply very rapidly, but have no regular marriages, the intercourse of the sexes leading to no selected home, each in perfect independence going whither fancy leads. The mother nurses her child only for a short time, accustoming it as soon as possible to the eating of ants and serpents; and as soon as the child can help itself, the mother lets it depart whither it pleases. Although these people live in thick woods, and conceal themselves amongst the trees, yet they become the prey of the slave-hunters of Susa, Kaffa, Dumbaro and Kulla; for whole regions of their woods are encircled by the hunters, so that the Dokos can not easily escape. When the slave-hunters come in sight of the poor creature, they hold up clothes of bright colors, singing and dancing, upon which the Dokos allow themselves to be captured without resistance, knowing from experience such resistance is fruitless, and can lead only to their destruction. In this way thousands can be captured by a small band of hunters; and once captured they become quite docile. In slavery the Dokos retain their predilection for feeding on mice, serpents and ants, although often on that account punished by their masters,

who in other respects are attached to them, as they are docile and obedient, have few wants, and enjoy good health, for which reasons they are never sold as slaves beyond Enarea. As diseases are unknown among them, they die only of old age, or through the assaults of their enemies."

OLD AND YOUNG SLEEPING TOGETHER.

As to the ill effects to the young, from sleeping with the old, a medical writer says:

"A habit which is considerably prevalent in almost every family of allowing children to sleep with older persons, has ruined the nervous vivacity and physical energy of many a promising child. Every parent who loves his child, and wishes to preserve to him a sound nervous system, with which to buffet successfully the cares, sorrows, and labors of life, must see to it that his nervous vitality is not absorbed by some diseased or aged relative.

"Children, compared with adults, are electrically in a positive condition. The rapid changes which are going on in their little bodies, abundantly generate and as extensively work

up vital nervo-electric fluids. But when, by contact for long nights with elder and negative persons, the vitalizing electricity of their tender organizations is absorbed, they soon pine, grow pale, languid, and dull, while their bed companions feel a corresponding invigoration. It was sought in the olden time to invigorate King David, the Psalmist, by causing a young and vigorous and healthy person to sleep with him. Although it failed of the desired effect, it proved that there was a popular impression that healthful influences were absorbed by one party. Be that as it may, it is undeniable that healthful influences are lost, and to a fatal extent sometimes. A woman was prostrated with incurable consumption. Her infant occupied the same bed with her almost constantly day and night. The mother lingered for months on the verge of the grave—her demise being hourly expected. Still she lingered on, daily disproving the predictions of her medical attendants. The child, meanwhile, pined without any apparent disease. Its once fat little cheeks fell away with singular rapidity till every bone in its face was visible. Finally it had imparted to the mother its last spark of vitality, and simultaneously both died.

Recent medico-chemical investigations, in a German city, have proved that the green coloring matter used in the manufacture of curtains and paper hangings, contains poisonous substances in sufficient quantities to cause illness. Several physicians testified that patients sleeping in rooms hung with decorations containing much dark green, speedily recovered their health upon being removed to apartments not so decorated. And chemical analysis soon succeeded in ascertaining the presence of noxious matter.

The general argument of these pages is to show that sleeping-rooms should be large, should be supplied with a pure atmosphere, that this should be constantly renewed, and that as sleeping with others in the same room and in the same bed is an important source of impurity to the air of a chamber, arrangements should be made by all who are so fortunate as to possess the means, to have a separate room

and a separate bed for every member of the household; for there are strong reasons for believing that every year there are more cases of dangerous and fatal diseases gradually engendered by the habit of sleeping in small, unventilated rooms, and by crowding persons in the same bed and room, than have occurred from a cholera atmosphere during any year since its first appearance in this country. Very many persons sleep in eight-by-ten rooms, that is, in rooms the length and breadth of which multiplied together, and this again by ten for the hight of the chamber, would make just eight hundred cubic feet, while the cubic space for each bed, according to the English apportionment for hospitals, is twenty-one hundred feet. "To give the air of a room the highest degree of freshness," the French hospitals contract for a complete renewal of the air of a room every hour, while the English assert that double that amount, or over four thousand feet an hour, is required. Yet there are multitudes in the city

of New-York who sleep with closed doors and windows, in rooms which do not contain a thousand cubic feet of space, and that thousand feet is to last all night, or at least eight hours of it, except with such scanty renewals as may be obtained through the crevices at the windows and doors, not an eighth of an inch in thickness. But when it is known that in many instances a man and wife and infant sleep habitually in rooms which do not net a thousand cubic feet of space, it is no marvel that multitudes prematurely perish in cities; nor is it wonderful that infant children wilt away like flowers without water, and that five thousand of them die in the city of New-York alone, during the hundred days which include the middle of July of any year.

Another fact is suggestive, that among the fifty thousand persons who sleep nightly in the lodging-houses of London, expressly arranged on the improved principles of space and ventilation already referred to, it has been proven that

not one single case of fever has been engendered in two years. Let every person of intelligence improve the lessons of this fact without an hour's delay.

Nothing short of "line upon line" will avail to impress these great practical truths on the popular mind; hence the reiteration of kindred facts bearing on the general subject of the impure air of sleeping-rooms, and the disastrous effects connected with them. Using wall-paper having a green color, especially if fuzzy—called velvety—and not glazed, is immediately destructive of health, and even of life, if persisted in. As proof, H. Fulland, near Tipton, England, moved into a new house in eighteen hundred and fifty-nine; in a short time all his children became curiously affected, although they had enjoyed good health up to the day of removal. They were worse at night than during the day; they were exceedingly restless; a singular twitching or jerking of the muscles, especially those of the face, with a decline of the general

health, indicated the working of some insidious agency. The medical man had them promptly removed to another room, when they began at once to improve, and soon recovered their health. They were then returned to their former room, when there was an immediate re-occurrence of the former symptoms. This suggested that the cause of the symptoms was in the room itself. There was a green-colored paper on the wall, from a small piece of which was scraped fuzz enough to contain, on analysis, enough arsenic to poison a man.

There was a very handsome house near one of the best provincial towns in England which could never keep its tenants. At last it stood empty and became worthless, because a detestable fever seized upon every family that lived in it. A ready-witted observer promised the owner to find out the cause. He traced the mischief to one room, and presently conjectured what was the matter there. He let a slip of glass into the wall, and found it next day

dimmed with fetid condensed vapor. He tore down a strip of paper, and found abundant cause for any amount of fever. For generations the walls had been papered afresh, without the removal of any thing underneath. And there was the putrid size and fermenting old paper, inches deep! A thorough clearance, scraping, and cleaning, put an end to the fever, and restored the value of the house.

In another house, more deadly effects still were traced to a workman who, having been employed to paper a room, and finding a considerable hollow in the wall, filled it up with a bucket of paste and remnants of paper, and then covered it over. The result was, destructive decomposition took place, of the paper, the paste, and the various coloring matters, throwing into the room the most deadly gases, which were at times of so much power that sensitive persons were attacked with various symptoms of illness, within ten or fifteen minutes after entering the room.

Two children of a manufacturer of "air-balls" of colored India-rubber have been declared by a coroner's jury to have been "accidentally poisoned by the continuous inhalations of particles of deleterious powder used in the coloring of air-balls." The father deposed that he used ultra-marine blue, Chinese red, and rose-pink, adding: "I did use Brunswick green, but desisted when another maker told me he had poisoned his finger with it." The balls would burst occasionally during the process of inflation, and the whole powder would fly about the room like smoke. Sometimes the children would pick up a ball after it had burst, and the father had seen the powder about their mouths.

The Philadelphia *Inquirer* recently says, in reference to the poisonous effects of the inhalation of arsenic:

"We know, ourselves, of the case of a young and beautiful lady of this city, whose health was shattered for years, and whose life was se-

riously jeopardized from habitually sleeping in a room covered with paper colored green by arsenia. Her early symptoms were merely a slight dryness about the throat and fauces, with some diarrhea. These gradually increased, and resisted all treatment. Dropsy supervened, and from being a beautiful girl, she became an object so bloated and repulsive in appearance, as to be painful to look at. Her physician suspected slow poisoning, but the most careful analysis of her food could detect nothing, and her life was despaired of. At last, however, he bethought him of the possibility of the air she breathed being the vehicle of the poison. A small portion of the wall-paper was taken to his laboratory, and, being subjected to analysis, was found to contain arsenic. The lady was removed to another part of the house, and her recovery, protracted through many months, dated from the day of the change."

It is a well-known fact that one or more of the European governments have prohibited the manufacture of the common Lucifer matches, in consequence of the terrible eating sores which form on the jaws and other portions of

the persons of the girls who pass their time in rooms where there is a constant smell of brimstone.

These are but a sample of multitudes of cases of authentic record, showing the dangerous and fatal effects of breathing habitually an impure atmosphere, and that as one third of existence is spent in sleeping-chambers, the atmosphere of which is specially corrupted by two or three persons sleeping in the same small unventilated room at the same time, strenuous efforts should be promptly inaugurated by the more intelligent classes of society to abate a social custom which exercises such a wide influence for evil on the health and happiness of the people.

In reference to the fact that the more crowded the habitations of a locality are, the more disease there is, and vice versa, Parliamentary returns show that of twenty-eight hundred infants annually sent to vari-

ous hospitals in cities and towns to be taken care of, twenty-four out of every twenty-five died. A law was immediately passed that they should be sent to the country thereafter, when it was found that only nine out of twenty-five died the first year; that is, instead of twenty-six hundred and ninety dying, there are only four hundred and fifty, a difference of twenty-two hundred and forty, showing in a striking degree the susceptibility of infants to the ill-effects of a contaminated air, and the value of causing them to sleep where the atmosphere can not be tainted with the breath which comes all loaded with impurities from the lungs of others. This simple unvarnished statement of the fact, which is indisputable, ought to impress the mind of every parent deeply with the importance and the duty of using all practicable means for securing to their offspring the ha-

bitual breathing of the purest air possible; not only in the daytime, but also during the night, when the system is less capable of resisting injurious influences of any kind, by reason of the inaction of a state of sleep, and quite as much from the bodily debilities caused by the labors and exercises of the day, being careful, however, to avoid a general, but radical and mischievous error, that warm air is necessarily impure. Warmth is as essential to health as pure air, and how best to secure both, should be the constant effort of all who are wise for themselves, and for those whose health and lives they are the providential custodians. To die childless, after having had children, must be one of the most crushing of all calamities of the heart; yet, in multitudes of cases, the sufferers are the immediate authors of their own sorrows, by reason of their unpardonable ignorance or more criminal neg-

lect, in the direction, among others, of improper regulations as to the sleeping and breathing of their children.

A very considerable portion, at least one third, of our time is spent in our sleeping-rooms, and it is well worthy of consideration how to make such arrangements as will exclude the greatest number of sources of atmospheric contamination; the greatest abundance of air and its most plentiful renewal and as a single sleeper will taint more than one half the air of a large-sized chamber, only one person should be allotted to each, when practicable. The chamber should be the highest, the airiest, the sunniest, and the cleanest room in every family dwelling; and yet the smallest, the most cluttered up, and the most out-of-the-way apartments are selected too frequently for dormitories. "Almost any place will do to sleep in," is the tacit language of perhaps three fourths of the people; hence, many

sleep habitually in garrets, attics, closets, under the steps, under the counters, any where. Hufeland, the great German physiologist, says that: "As we spend a considerable portion of our lives in the bed-chamber, its healthiness or unhealthiness can not fail to have a very important influence on our well-being."

In hospitals of very moderate liberality, an apartment is allowed to each invalid equal to ten feet each way, or one thousand cubic feet in all; according to this distribution, the chamber of a man, wife, and child should be at least sixteen feet long, fifteen broad, and twelve high, which would give less than a thousand feet for each. A hard-working man requires fully this much, to enable him to derive from sleep that renovation and vigor which will fit him to discharge the duties of the succeeding day with comfort to himself and with fidelity to his employer, hence it has been most perti-

nently observed that "small bed-rooms are no less a curse to the laborer, than they are to the farmer, the foreman, the landlord, and the nation."

It is well said in the *Scientific American:*

"If the impure air of the Black Hole of Calcutta could, out of one hundred and forty-six Englishmen, kill, in six hours, no less than seventy-nine, leaving in the morning no more than sixty-seven survivors in the whole, the perniciousness of bad ventilation can not be too much warned against. If you wish to preserve your health, and the health of others, ventilate your large rooms, and never live in small ones."

The following, from *Dickens' Household Words*, will be read with interest:

"People have often said that no difference can be detected in the analyzation of pure and impure air. This is one of the vulgar errors difficult to dislodge from the ordinary brain. The fact is, that the condensed air of a crowded room gives a deposit which, if allowed to remain a few days, forms a solid, thick, glutinous mass, having a strong odor of animal matter. If ex-

amined by the microscope, it is seen to undergo a remarkable change. First of all it is converted into a vegetable growth, and this is followed by the production of multitudes of animalcules, a decisive proof that it must contain certain organic matter, otherwise it could not nourish organic beings. This was the result arrived at by Dr. Angus Smith, in his beautiful experiments on the air and waters of towns, wherein he showed how the lungs and skin gave out organic matter, which is in itself a deadly poison, producing headache, sickness, disease, or epidemic, according to its strength. Why, if a few drops of the liquid matter obtained by the condensation of the air of a foul locality, introduced into the vein of a dog, can produce death by the phenomenon of typhus fever, what incalculable evils must not it produce on those human beings who breathe it again, rendered fouler and less capable of sustaining life with every breath drawn! Such contamination of the air, and consequent hot-bed of fever and epidemic, it is easily within the power of man to remove. Ventilation and cleanliness will do all, so far as the abolition of this evil goes; and ventilation and cleanliness are not miracles to be prayed

for, but certain results of common obedience to the laws of God."

It was announced, at a meeting of the New-York Sanitary Society, that only one fourth of the population lived in houses which contained but one family; it is therefore almost literally a city of tenement-houses:

"There are single tenement-houses which contain one hundred and twenty rooms, about the size of a state-room, and in a single pest-house of this description about four hundred human beings are immured in an atmosphere of effluvia, disease, and indecency. In such stupendous sties, ventilation and cleanliness are as likely to be found as in the Black Hole in Calcutta. On a single block, covering an area of four hundred feet square, nearly twice as many families are found as on the whole extent of the Fifth Avenue! It is also found that New-York, with twenty-one thousand families more than Philadelphia, has twenty-three thousand less dwellings than the Quaker City. Truly, these are astounding facts to every Christian and every philanthropist among us. Who can bring

any clean thing out of such immeasurable uncleanness? Do you wonder that fraud and peculation abound, when the majority of the electors in New-York issue from the tenement-house? Do you wonder that streets are filthy, children are degraded, property insecure, and Sabbath-breaking has to be kept within the limits of open heathenism only by the strong arm of the police?"

From such statements, the conviction presses itself upon us, that crowding and crime grow together as to communities; for where there are "*ninety-six families in a single house*, men, women, and children sleeping, like pigs or sheep, together, without air or ventilation, without light, with no protection, and no privacy, all breathing the same putrid effluvia," there must be moral and physical contaminations at the very thought of which the heart of humanity sinks and sickens. As with communities, so with families: crowding degrades.

There is significance in the emphatic enuncia tion of a popular writer, that "it is one of the

moral duties of every married woman, always to appear well dressed in the presence of her husband." Nothing can so much aid in this regard as a separate chamber, and if this were mutual in the married relation, it would add incalculably to that personal self-respect, that dignity of demeanor, and that courteousness of bearing, the most sedulous cultivation of which adds so incalculably to the amenities of domestic life.

VENTILATION AND HOUSE WARMING.

For the double purpose of making this volume practical on the general subject of ventilation, and to show that the popular mind is waking up to the importance of the subject, the subjoined articles are copied. "A Mechanic," in Buffalo, New-York, writes, on the conjoined subjects of House-warming and Ventilation:

"Those who have made experiments for the purpose of determining the quantity of pure air

required per minute for each individual, vary in their conclusions. They publish from three to ten cubic feet, but when physiological facts in relation to the size of lungs, health of persons, and various circumstances are considered, we concede the accuracy of either amount.

"We learn by science that the laws of nature do not long permit the enjoyment of health where pure air is not; and also when health is lost there can be no possible recovery of it without the aid of pure air. When we breathe, although the air in the lungs is on one side of the membrane and the blood on the other, a reciprocal action takes place between them. The blood receives through the membrane oxygen from the air, and at the same time the air receives from the blood carbonic acid gas and watery vapor. The amount of oxygen and carbonic acid gas thus exchanged are said to be equal—that is, pure air taken into the lungs is expelled with about eighty-five per cent carbonic acid gas and an equal amount of oxygen has been taken from it by the blood.

"It appears that a middle-sized man, aged about thirty-eight years, and whose pulse is seventy on an average, gives off three hundred

and two cubic inches of carbonic acid gas from his lungs in eleven minutes, and supposing the production uniform for twenty-four hours, the total quantity in that period would be thirty-nine thousand five hundred and thirty-four cubic inches, (agreeing almost exactly with Dr. Thompson's estimate,) weighing eighteen thousand six hundred and eighty-three grains, the carbonic acid in which is five thousand three hundred and sixty-three grains, or rather more than eleven ounces Troy. The oxygen consumed in the same time will be equal in volume to the carbonic acid gas. See respiration under Physiology in the *Encyclopædia Britannica.*

"It has been shown by experiment that the pure air once breathed contains eighty-five per cent of carbonic acid, and that the same air by continued respirations would not take more than ten per cent. Hence the necessity in the preservation of health of breathing air but once as it enters and departs from a room. Proper ventilation permits the air to pass away after having been once breathed, for in respiration the air expelled from the lungs being warmed ascends and is not where it may be re-

ceived by their next expansion. But if by [illegible] sufficient ventilation air is breathed more than once, it gives less oxygen to the blood and takes less carbonic acid and watery vapor from it than is necessary for the preservation of health. The efficacious action of the blood ceases because of the deleterious presence of carbonic acid in the blood and in the air. Carbonic acid gas has a little more specific gravity than atmospheric air, but the difference is so slight that when in a current of air it is carried upward, or where there is no current, it tends downward.

"Because of the bad ventilation, children in school may dread their task. For want of pure air their digestion is impeded. They then feel as if a heavy burden was upon them. If they try to learn they never succeed. If they succeed in committing a paragraph to memory, it is soon forgotten. Being ignorant of themselves and the causes of their maladies, they judge themselves incapacitated for intellectual pursuits.

"It is from the same cause, very frequently, that religious congregations have many members who spend in church an hour of sleepy

thoughtlessness, and return home without being able to tell the points of the speaker's discourse, though they had been where one of the most instructive and interesting sermons was preached. It is doubtless because of bad ventilation that the power of the advocate of the Gospel in the pulpit is much less than it otherwise would be.

"Houses of worship are mostly so constructed that the impure air is driven, by opening the door upon the preacher. He, in the act of speaking, inhales it more injuriously than others. As a victim he may be marked for an early death. The sympathy and defense which he would have if a wild beast of the forest should assail him in the pulpit does not appear to defend him from the consequences of bad ventilation, which fact is a proof of the absence of knowledge in relation to the subject."

VENTILATION OF KITCHENS.

A correspondent of the *Ohio Farmer* says:

"There is always more or less steam and grease-smoke caused by cooking, and their removal is always desirable without resorting to open doors and windows.

"In eighteen hundred and fifty-six I put a cook-stove into my kitchen, which is fourteen by sixteen feet, and placed a ventilator over it, in the shape of an inverted funnel, to the upper end of which was attached an eight-inch pipe, that entered the flue above the stove-pipe. My stove and ventilator still remain there, and we are never troubled with smoke or steam—all is instantly carried away.

"This ventilator is of my own planning, and made of sheet iron. The eight inch pipe has a circular elbow, connecting it with the flue, and both it and the stove pipe are below the ceiling. The flue is twelve by sixteen inches inside, and is therefore capable of carrying off a good deal of smoke and air. The rim, or widest part of the ventilator, is thirty inches in diameter, and is suspended four feet above the top of the stove. There is a damper in the ventilator pipe, that enables me to shut it entirely, if I desire to start the fire quick, by increasing the draft. It soon becomes necessary to open it, however, as the draft in my chimney is too great, and burns the wood too fast. Many people have seen it, and think it worth ten dollars a year to any kitchen. A hole can be made

easily in the flue, or the pipe may be carried through the ceiling, and enter the flue above, especially if the kitchen is one story, and an open garret above it. More room is obtained by the latter method. It will also do equally well if the pipe is carried through the roof or side of the house. It is not like a stove-pipe, and there is no danger from fire. It is easily and cheaply made, and may be obtained from any tin-plate or sheet-iron store."

MANAGING WINDOWS FOR AIR.

"There is always a draught through key-holes, window-crevices, because as external air is colder than the air in the room we occupy, it rushes through the window-crevices to supply the deficiency caused by the escape of wind up the chimney. If you open the lower sash of a window, there is more draught than if you open the upper sash. The reason of this is because if the lower sash be opened, cold air will rush into the room and cause a great draught inward; but if the upper sash be opened the heated air will rush out, and of course there will be less draught inward. A room is better ventilated

by opening the upper sash, because the hot ventilated air, which always ascends upwards towards the ceiling, can escape more easily. The wind dries damp linen, because dry wind, like a sponge, imbibes the particles of vapor from the surface of the linen as fast as they are formed.

"The hottest place in a church or chapel is the gallery, because the heated air of the building ascends, and all the cold air which can enter through the doors and windows keeps to the floor till it has become heated. Special attention should be given to the ventilation of sleeping-rooms; for pure air, and an abundance of it, is more necessary when we are sleeping than when we are awake. Sleeping-rooms should be large, high and dry, more especially in warm latitudes, and in situations where the windows have to be kept closed at night on account of malaria."

VENTILATION OF SHOPS.

"Few things," says a foreign writer, "are more insidiously undermining the constitution and vital stamina of many 'young people' than the want of shop ventilation, particularly in the evening, when the gas is lighted.

"There are many trades, the occupation in which is very light, and requires little or no exertion. Stationers, fancy wool, top-shops, and the like, nearly all keep their doors closed 'because it is so cold;' the result is, that the burning gas vitiates the air in the shop; and the assistants inhaling this, the circulation of the blood is lowered, and the outward cold is felt all the more. Again, there are some shops the contents of which naturally yield emanations of an unhealthy kind when a free current of air is excluded. Who, for instance, can go into a shoe-shop, the doors of which are kept closed, without at once being conscious of the unpleasant odor of old and new leather? The same may be said of a ready-made clothing depot; the peculiar odor of the cloth and fustian, the burnt gas, and the confined breath of the people serving therein, make it exceeding disagreeable to a stranger on entering out of the fresh air. If a remark be made by a purchaser that the shop 'smells close,' the assistant is almost sure to reply that 'they don't notice it.' What, however, they do notice, is headache, languor, loss of appetite, ennui, debility, pallor of the face, blotchy skin, redness of the nose, and white face.

All unheeded warnings to ventilate the dwelling-place, which, if not attended to, produce worse results.

"Many drapers' shops are badly ventilated; some, where they drive a good trade, have been enlarged by the addition of neighboring houses, all the fireplaces have been removed, and but one or two entrances are left to the whole building. There are, on the other hand, many trades where the door is always open; the result is that all engaged in it are healthy, and never complain of being cold. Look at the butcher-boy, blooming and healthy; furniture-dealers, tavern keepers, and many other occupations are, as a general rule, healthy, because of the free ventilation of the shops or places of trade.

"The nose is the gate to the lungs, and whatever is indicative of unpleasantness is unhealthful, and should be shut out. Instead of closing the doors to keep the shop warm, it is better, if the cold is severe, to wear warmer under-clothing—half gloves, thick stockings, warm jackets, and woolly neckerchiefs. In winter, dress accordingly in warm clothes, and plenty of them. Arising from well-known causes, cold air, particularly fresh air, warms the person that

breathes it more than warm air. It is proverbial that persons sitting quietly in a room 'feel a draught' from every cranny. 'The key-hole blows enough to turn a mill;' though they 'creep into the fire,' and roast themselves, they have always one side cold; yet a little exertion in fresh open air would put them into a glow.

"As gas burns, and people breathe, water is produced and exhaled; if this steam has been condensed on the inside of windows, you may be sure the shop wants ventilation. Dust of every kind should also be avoided with scrupulous care. Every morning when the shop is dusted, doors and skylights should always be wide open, so as to clear away the dust as it flies about. It avails but little to dust without getting rid of it out of the premises; to make a dust with a brush in one place for it to settle in another, is labor in vain. Persons who take a morning or evening draught of dust are sure to be troubled with air-tube complaints. This, then, is another reason for ventilating the shop.

"Those observations apply not only to the tradesman's shop, but also to the workshop or factory. The fearful decadence of the health of such towns as Manchester, Oldham and Shef-

field, which are in truth but congregations of workshops, is notorious; the pale, wan faces of the dwellers there too truly tell the want of pure, clean, fresh air.

"Passing now from the private shop to public institutions, we are compelled to admit the same radical fault—the want of that element which is 'the breath of life.'

"In the churches, schools, and assemblies, people who go there suffer more or less from this evil. It is proverbial how persons, young and old, suffer from colds, bronchitis, and influenza, all of which are said to be 'caught' when they return from some public place of assembly. The question naturally arises, how is this? The answer is, that it is caused by the sudden change which the body undergoes in passing from a heated, impure air to that of the natural temperature, containing also its proper proportion of elements. Man requires for his health one gallon of air every minute of his life; the individuals of a church congregation are rarely, if ever, supplied with a quarter of that quantity. Only at the cathedrals is the air space in proportion to the worshipers. A man of large lungs inhales about twenty-five cubic inches of

air at each respiration; he breathes eleven times a minute, and thus requires nine and a half cubic feet of air every hour. Now when there are a thousand persons under one roof (some of the metropolitan churches and chapels contain twenty-five hundred persons) for a couple of hours, it is evident that twenty thousand cubic feet of air are required to supply that which is necessary for existence to those thousand persons in a pure atmosphere, so that, of course, a much larger quantity than that is required in order that a current can be established to remove the effete matter of exhalation.

"The evils of vitiated air are also more to be guarded against, because persons can live in it without being aware of its danger, so far as their sensations are concerned. When we enter a crowded assembly on a cold day, the air is, at first, repulsive and oppressive, but these sensations gradually disappear, and then we breathe freely and are unconscious of the quality of the air. Science, however, reveals the fact that the system sinks in action to meet the conditions of the impure air, but it does so at the expense of having the vital functions gradually depressed, and when this is continued disease follows. No

disease can be thoroughly cured when there is a want of ventilation. It is related that illness continued in a family until a pane of glass was accidentally broken, and then it ceased; the window not being repaired, a plentiful supply of fresh air was admitted."

BURYING UNDER CHURCHES.

"The practice of building sepulchral vaults under the churches was fraught with the greatest evil to the health of those who went into the edifice for sacred purposes. But, with few exceptions, it is now interdicted by the legislature; still a great deal has to be done. Nearly all the churches in the empire require some artificial means of ventilation to render them physically fit receptacles for the body during a prolonged service. The Sunday-schools, also, are a general rule, are very ill-ventilated, and in the second hour the lessons are far worse rendered than in the first, solely arising from a semi-lethargic coma that comes over the pupils breathing a carbonic air, which has already done duty, and been inhaled by others several times. However it is to be regretted, it is yet true that people will sometimes sleep during

the sermon. Now, the minister must not be twitted with this, for with the oratory of a Jeremy Taylor or a Tillotson, people could not be kept awake in an atmosphere charged with carbonic gas, the emanations of a thousand listeners. The church-wardens should ventilate the churches, and see that the congregations have sufficient air for breathing; if people go to sleep, the church-wardens are more to blame than the preacher."

VENTILATION AS INFLUENCING HEALTH AND LONGEVITY.

In a public lecture on this subject, Dr. E. Y. Robins, an indefatigable worker and an able and scientific writer on subjects allied to ventilation and general hygiene, said that air was the prime necessary of life; that we could live more days without food than we could minutes without air. The purpose of our breathing was, first, to supply the blood with oxygen, which is the life-sustaining principle of the air, and second, to free the blood from carbonic acid and other impurities. The air which we breathe is found, on expiration, to have lost a large part of its oxygen, and to be impregnated with car-

bonic acid gas — that substance which often proves fatal to persons who descend into wells, and which is the active agent of death in cases of suicide by burning charcoal. It produces death whether retained in the blood or inhaled into the lungs—the poisoning process in both cases being precisely the same.

To produce death by that agent, it was by no means necessary that it should be breathed in a pure state. Dr. Carpenter had ascertained that air containing five or six per cent of carbonic acid gas would produce immediate death, and that less than one half that quantity would soon prove fatal; and Dr. T. Herbert Barker had ascertained by experiments with this substance, that an animal in an atmosphere containing only two per cent of carbonic acid would die in about two hours. Now the air which we exhale from the lungs contains, according to standard authorities, about five per cent of carbonic acid, and hence if exactly the same air were reïnhaled it would quickly prove fatal. It is a substance that is constantly accumulating in the blood, and if it is not as constantly removed it will speedily produce death. The process of breathing is but the instinctive

effort of nature to free herself from the presence of this poison. But air which has once been in the lungs, will no longer perform this office, being already saturated with carbonic acid. Hence the necessity of inhaling fresh air at every breath. The importance of this was illustrated by Dr. Southwood Smith, who said: "Stop the respiration of an animal, or confine it to air which has already been respired, and carbon accumulates in the venous blood and mixes with the arterial blood. In half a minute the blood flowing in the arteries is evidently darker; in three quarters of a minute it is of a dusky hue, and in a minute and a half it is quite black. Every particle of arterial blood now disappears, and the whole mass becomes venous, sensibility is abolished, the animal falls down, and in three, or at most in four minutes, the heart entirely ceases its action, and can never again be excited." Now, if effects are proportioned to their causes, and if an atmosphere impregnated with five per cent — or one twentieth part of its volume — of carbonic acid, will thus produce death in a few minutes, what must be the probable effect of breathing, for twenty or forty years, even the much minuter

proportions which must be present in every inhabited room where there is not a constant ingress and egress of air? It must lower the standard of health and shorten the duration of life. But not only is the air in a close room thus constantly being impregnated with carbonic acid gas to the amount of about twenty-eight cubic inches per minute for each adult man occupying such room, but there is also, according to the best authorities, constantly being discharged by the lungs and pores of the skin, an equal amount, by weight — that is, about three or three and a half pounds in twenty-four hours — of effete, decaying animal substance, in the form of insensible vapor, which we often see condensed in drops upon the windows of crowded rooms and railroad-cars. Those drops, if collected and evaporated, leave a thick, putrid mass of animal matter. The breathing of these exhalations is believed to be quite as efficient in producing disease as carbonic acid itself. But there is still a third deterioration produced in the air by respiration, and that is, the loss of its oxygen. Oxygen is the vital and life-supporting principle of the air, and it is found that, when the air enters the lungs, the blood absorbs

about forty per cent of the oxygen which it contains. It is upon this we live; and the air that is exhaled being deficient by almost one half in this vital element, of course can no longer support life. And as we inhale about five hundred cubic inches of air every minute, we of course deprive that quantity of air of forty per cent of its oxygen each minute. The Creator has provided for the constant and complete removal of these poisonous exhalations by causing the expired air to rise, by its increased warmth and consequent levity, quickly above our heads and beyond the reach of a second inhalation, and by sweeping it away by the winds; but by our impervious ceilings and tight walls, we obstruct the operation of this beneficent law, and prevent these poisonous exhalations from escaping. Hence the air of a close room, though occupied but by a single person, becomes, from the very first moment of occupancy, impregnated with these impurities, which accumulate more and more, the longer it is occupied without ventilation, and the more it is crowded. It would certainly be difficult to over-estimate the importance to life and health of the purity of the air we breathe, and it would also be diffi-

cult to determine to what period of duration human life might be prolonged, did we and had our ancestors always breathed a perfectly pure atmosphere. A most remarkable and convincing illustration of the effects of the quality of the air we breathe upon health, is to be found in the experience of the armies of England and France during the late Russian war. England, out of a total force of ninety-three thousand nine hundred and fifty-nine men engaged in the campaign in the Crimea, lost thirty-three thousand six hundred and forty-five, of which number only only two thousand and fifty-eight were killed in action, and one thousand seven hundred and sixty-one died of wounds, while no less than sixteen thousand two hundred and ninety-eight died of disease at the seat of war, and about thirteen thousand were sent home on account of sickness, many of whom, no doubt, afterwards died. To every one taken to the hospitals on account of wounds, twelve were taken there on account of disease. The chief destroyer was typhus fever. M. Boudens, Surgeon-in-Chief of the French army, in a letter written home during the war, says of this disease: "It is engendered by crowding and

want, either in hospitals, prisons, or on board of vessels. The disease may indeed be called forth and removed at will." And he adds: "The first remedy is pure air and powerful ventilation." The great mortality in the English army was during the early period of the war. After the Sanitary Commissioners arrived and commenced their operations by securing greater ventilation, the sickness was staid, and finally disappeared. The great panacea was fresh air. In the French army, where no sanitary reforms were introduced, the great mortality continued and increased, thus showing clearly that the changes made by the Sanitary Commissioners in the English army were the sole causes of the decrease of mortality where they labored. Recurring again to the condition of our buildings here, the lecturer said: In our school-rooms the matter is still worse; while in our railroad-cars we have actually less breathing room than the wretched prisoners in the Black Hole of Calcutta—they having had about forty cubic feet per man, while in our cars we have only an allowance of about thirty cubic feet. In addition to this, the lighting of our rooms in the evening is a source of great con-

tamination to the air—each gas-burner being estimated to generate as much carbonic acid gas as the respiration of four persons, or more than one hundred cubic inches per minute. Every gas-burner should have a ventilating tube to carry off the products of combustion, and convey them entirely out of the room, as is the case in the Houses of Parliament, and many other public and private buildings in England. In conclusion, he stated his belief, that by due attention to sewerage and ventilation, the mortality of this city would be decreased ten thousand every year. The lecture, which occupied about an hour in reading, was listened to with great satisfaction by all present. When the lecture was concluded, Dr. Harris stated that the next lecture would be delivered on Monday evening.

"In answer to a call, Dr. Halliday referred to recent visits he had made to the houses in this city in which a number of families lived together. He said that the Italian residents here, especially, were in the habit of living several families together, in one comparatively small room. He also mentioned that in a single block he found forty-five families, not a single one of

whom had a child living. When he asked for their children, the answer generally was: 'God has taken them away to heaven.' This terrible infant mortality was caused by want of cleanliness and ventilation in their residences."

The best, the ablest, and most successful weekly publication of its kind in the world, is the New-York *Scientific American*. One of its special correspondents, E. M. Richards, writes on the same important subject of ventilation:

"Many persons have remarked the languor and sleepiness that are apt to creep over them after sitting for an hour or so in a crowded church. Many persons refer this to other than the real cause—to dullness of the discourse, bodily derangement, etc.—while really, in most cases, it is solely to be attributed to a deficiency of vital air. On first commencing the religious services, the supply is generally sufficient; but before the close, it becomes totally inadequate. Many sick stomachs and bilious headaches are thus inflicted on devout but physiologically ignorant worshipers.

"Our schools are little better than 'mephitic

dens,' in which the poor children are almost poisoned, and their brains stupified, by the impurities they are obliged to take into their systems through their lungs. Under these circumstances it is equally impossible for the pupils to attend as well to their studies, and for the masters to exhibit as much tact or patience in imparting knowledge, as they would if they were placed under more favorable circumstances. So keen is the writer's remembrance of the miseries he endured from this cause, during his schoolboy days, and so deep his conviction of the lasting injury inflicted thereby, that, if compelled to choose between the two evils, he would prefer having his children to remain untaught all their lives than subject them to the same blood-corrupting process which he underwent.

"The railroad-car, the ship, the steamboat, all give evidence of the presence of the same demon —foul air. A night's ride in some of our trains is enough to develop consumption in those predisposed to that disease. The climax of horrors, however, is reached in the crowded steamship, where, to an abundance of carbonic acid, are added stinking bilge-water, sea-sick passengers, fumes of cookery, oil and rancid tallow

from the machinery, and all other abominations only to be found on ship-board. There is no use in multiplying examples; they are to be found on all sides, if we only look for them.

"The following is a good test of the salubrity of any apartment: Let a healthy person, whose sense of smell is unimpaired, take a brisk walk in the open air, then come at once into the room, and if there is any close or other unpleasant smell, the atmosphere of that room is more or less hurtful. How many of our bed-chambers could pass that ordeal in the early morning, after being slept in during the night?

"Having glanced at the prevalence of bad air and the evil consequences that always follow its habitual inhalation, the means whereby we may protect ourselves from it are now to be considered. The theory of the whole thing is simple enough: the vitiated air must be removed as fast as produced, and pure air introduced (without intermixture) to supply its place. The practice, however, requires some little care. It may be here stated that winter is the season in which people suffer most from defective ventilation, as the external cold makes them carefully close all the apertures in their rooms; while, on

the contrary, in the summer, the heat obliges them to open them all. But ventilation is more easily effected during cold weather. We must be careful not to confound *pure* air with *cold*, or *warm* air with *foul;* this is a very common mistake, and a very dangerous one, too; for warm air may be quite pure, and cold air just the reverse.

"To obtain proper, reliable ventilation, it will not do to trust to the doors, windows, or fireplaces (should these latter exist) of our apartments; the first are for ingress and egress, the second to transmit light, and the last to pass the products of combustion from the fire into the open air. No doubt, in the absence of any better means, the rooms may be kept in a tolerably wholesome condition by the free use of doors and windows, but not in such a perfect, pleasant, and economical manner as when proper apparatus is used to secure this result. As before stated, the breath exhaled from the lungs, being heated, rises rapidly to the highest portion of the room, where, if means for its exit are provided, it will at once (in most conditions of the atmosphere) pass out into the open air; but if, as is the case in most build-

ings, public or private, there is no foul air-escape near the ceiling, the heated portion of air under consideration remains a short time suspended aloft; then, as it becomes cooler, it descends lower and lower, till at last it mingles with the air near the level of the mouths of the occupants of the apartment. Should there be an open fire-place, the foul air, having descended from the ceiling, generally escapes in great part up the chimney; having first come below the level of the mouth, even of a seated person. This fact is especially to be noted, as showing that an open fire-place very indifferently supplies the place of a regular foul air-escape. Some of it may also, in certain states of the external atmosphere, pass out at the crevices over the tops of the windows and the top of the door, supposing them to be closed, as they generally are in winter; but if they are open, of course the case is not so bad. Now, to supply the place of this out-passing vitiated air, fresh air usually comes in through any cracks or openings that it can find at or near the level of the floor; and in cold weather, if there is a fire burning in the apartment, the external air will pour in at any opening it can find, high or low.

It is evident that, under these circumstances, the in-coming fresh and out-going foul air become more or less intermingled, so that it is impossible for the inmates to breathe any but a partially impure element. Opening the windows in winter, though preferable to being poisoned with noxious gases, is objectionable, as it causes sudden drafts of very cold air, and thus may injure invalids, besides being unpleasant to those in robust health; and, moreover, it only somewhat remedies the evil. In cases where there are no fire-places, if it were possible to construct rooms perfectly air-tight, (and the best mechanics always leave their work the freest from flaws and cracks,) there could be no in-coming or out-going draft in a chamber of this kind; in a very little time it would be impossible to exist, so rapidly would the noxious gases accumulate. It thus appears that, for the ability to remain in such a room without absolute and immediate danger to life, we have to thank the bad joints, crevices, and holes left about windows and doors by the defective work of the house-carpenter. Certainly, we of the nineteenth century have not much reason to boast of our advances in the art of house-build-

ing when we thus construct our dwellings. It is not many centuries since there were no chimneys to the abodes of the great and wealthy; a huge fire was kindled in the middle of the large room where the baron and his family lived, the smoke and soot from which fire was allowed to make its escape in the best way it could through an aperture contrived in the roof. The discomforts of an apartment thus warmed can hardly be over-rated.

"We may, perhaps, laugh at the rude habits and the little knowledge of 'household science' that could tolerate such a state of things; quite forgetting that we are just as far behind, in not providing for the exit of the poisonous products of respiration. If we have improved on our forefathers in one respect, we have gone back in another; for the aforementioned opening in the roof, though inferior to the modern chimney for passing the smoke, provided a much better outlet for the other exhalations of the spacious hall below."

The *Philadelphia Bulletin* remarks, in the same direction:

"Human nature is skeptical concerning that

which it can not see. If every body could see foul air, if it was as palpable as foul water, men would no more breathe it as they do, than they now drink the water of a green and stagnated pool. It is odd how slowly a plain truth works its way when it has the disadvantage of being new. Even architects, who ought to understand their business, will build houses, public halls, and churches, without an intentional crevice for ventilation. We remember that an old gentleman in one of our boroughs was the laughing-stock of the town because he ventilated his parlor. And in great rooms, built for the purpose of accommodating thousands, there will sometimes be little or no provision for discharging the foul air which is poisoning the people.

"But the greatest imposition that we know of, in this regard, is the condition of the cars on the great railway lines in the winter. Imposition, we say, because while the going to a lecture or concert in a public hall is voluntary, it is often a necessity of travel. Two large stoves heated red hot with anthracite coal, are placed in a space of say fifteen feet wide and ten feet high. This space contains about eighty people, and is closely shut up. The stoves use up

oxygen with great rapidity, and what is left is breathed over and over again by the eighty people, who are giving out from their lungs, constantly, a gas utterly unfit to be breathed. Is it not incredible that upon roads conducted with the propriety, good sense, and acuteness, with which some of our good lines are managed, there is not wit enough to cut a few holes near the top of the car, to let out the foul air? Gentlemen, presidents, superintendents, engineers, and conductors, pray have mercy on passengers! We plead for the people with headaches, with nausea, and with a stifling sensation which forces them to sit in a draught with a car going twenty-five miles an hour, and the thermometer twenty degrees below freezing-point, at the risk of their life—or else endure slow poison."

SUNLIGHT AS A VENTILATOR.

But it must be remembered that the ventilation of no apartment is perfect without the aid of the blessed sunlight.

"Sir James Wylie, late physician to the Emperor of Russia, attentively studied the effects of

light as a curative agent in the hospitals of St. Petersburg; and he discovered that the number of patients who were cured in rooms properly lighted was four times greater than of those confined in dark rooms. This led to a complete reform in lighting the hospitals of Russia, and with the most beneficial results. In all cities visited by the cholera, it was universally found that the greatest number of deaths took place in narrow streets, and on the sides of those having a northern exposure, where the salutary beams of the sun were excluded. The inhabitants of the southern slopes of mountains are better developed and more healthy than those who live on the northern sides; while those who dwell in secluded valleys are generally subject to peculiar diseases and deformities of person. These different results are due to the agency of light, without a full supply of which plants and animals maintain but a sickly and feeble existence. Eminent physicians have observed that partially deformed children have been restored by exposure to the sun and the open air. As scrofula is most prevalent among the children of the poor, this is attributed by many persons to their living in dark and con-

fined houses; such diseases being most common among those residing in underground tenements.

"The health statistics of all civilized countries have improved greatly during the past century. This may be justly regarded as due to the superior construction of houses, by admitting more light into them. The old-fashioned houses were built with narrow, dwarfish windows, and as glass, until within recent years, was very dear, its application to windows was proportionally limited. Dwellings of the present day are generally built with windows of four times the dimensions of those belonging to the olden times; and the streets of our cities (upon which houses depend so much for their light) are made much wider than those of a past age. Light is now more valued, for its influence is better understood than was the case fifty or one hundred years ago; and the most gratifying results have followed. But we are not at the end of city improvements yet; and it is felt, in almost all our cities, that if the streets (even the broadest of them) were twice their present width, a general benefit would be the result."

"The following fact," says a good authority,

"has been established by careful observation: That where sunlight penetrates all the rooms of a dwelling, the inmates are less liable to sickness, than in a house where the apartments lose its health-invigorating influences. Basement-rooms are the nurseries of indisposition. It is a gross mistake to compel human beings to reside partially under ground. There is a defective condition of the air in such rooms, connected with dampness, besides the decomposing paint on the walls, and the escape of noxious gases from pipes and drains. It is strange that builders persist in doing violence to humanity, by still erecting houses with basements."

In continuation of the same subject, that beautiful and lovable character, Florence Nightingale, observes of

THE MANIA FOR DARK ROOMS.

American women have a strange mania for dark rooms, but hear what Florence Nightingale, in her Notes on Nursing, says on the subject: "A dark house is almost always an unhealthy house, always an ill-aired house. Want of light stops growth, and promotes scrofula,

rickets, etc., among the children. People lose their health in a dark house, and if they get ill, they can not get well again in it. Three out of many 'negligences and ignorances' in managing the health of houses generally, I will here mention as specimens. First, that the female head in charge of any building does not think it necessary to visit every hole and corner of it every day. How can she expect those who are under her to be more careful to maintain her house in a healthy condition than she who is in charge of it? Second, that it is not considered essential to air, to sun, and to clean rooms while uninhabited; which is simply ignoring the first elementary notion of sanitary things, and laying the ground ready for all kinds of diseases. Third, that the window, and one window, is considered enough to air a room. Don't imagine that if you who are in charge don't look to all those things yourself, those under you will be more careful than you are. It appears as if the part of the mistress was to complain of her servants, and to accept their excuse—not to show them how there need be neither complaints made nor excuses."

A SUNNY WRITER IN A 'PLEA FOR THE LITTLE ONES."

"Let the warm weather come! Let your children amuse themselves out of doors. Don't keep them shut up like house-plants, until they become as pale and as thin as ghosts. Strip off the finery, put on coarse garments, and turn them out to play in the sand—to make 'mud-cakes'—to daub their faces with any thing of an 'earthy nature,' which will have a tendency to make them look as though they had entered into a co-partnership with dirt. Keep them in the house, and they will soon look like, and be of about as much value as a potato which grows in the cellar—pale, puny, sickly, sentimental wrecks of humanity. Turn them out, we say, boys and girls, and let them run, snuff the pure air, and be happy. Who cares if they do get tanned? Leather must be tanned before it is fit for use, and boys and girls must undergo a hardening process, before they are qualified to engage in the arduous duties of active life. Let the sun come into our dwellings, and let our chambers be on the sunny side of the house. All know that a

north light is cold, searching, and unsentimental, and tries both complexion and the heart; it reveals gray hairs, and the first faint footprints of the bird of ill-omen in the corners of the eyes with appalling distinctness. The flowers of the carpet are duller, for it has not a tint to lend; except the light of early morning, nothing is less complimentary than a northern aspect.

"But a room that the sun is not permitted to look into at all, should be without a door; it is unfit for human occupancy. Even the flowers will grow pale, and be frightened to death in it. The primary object of a window is not for the sons of men to look out, but for the sun to look in.

"Pleasant sunshine not only brightens a man's buttons, but his heart; it makes his spirit as cheerful as the landscape. He can not live and be happy—he can not be happy without it.

"White is not beauty, any more than a melancholy blue is the 'color of virtue,' and yet the insane dodging of the sun has its origin in some such optical delusion. We catch school-girls eating chalk and drinking vinegar to render

themselves pale and interesting. Next to an inky skin, they dread a rich brown cheek, and a brow that the sun has pressed as pure a kiss upon as the mellifluous lips of Israel could give.

"More windows in the sunny side of our dwellings, more living in the open air; less fear of an unclouded and parasolless sun, and more bold, free exercise, would kindle a true, country, milkmaid-glow upon cheeks as chalky as the cliffs of Dover, and let a little sunshine into the shady corners of many a heart. Light, daylight, was not made merely to see by and warm by, but to grow bright and glad in; and that beam of a clear, autumn morning has failed to reach its destination that has not shone into the spirit, and burnished the thought, as it has brightened the eye."

OUT-DOOR LIFE.

"Just as that poetry is the freshest which the out-door life has the most nourished, so I believe that there is no surer sign of the rich vitality which finds its raciest joys in sources the most innocent, than the childlike taste for that same out-door life. Whether you take from fortune the palace or the cottage, add to

your chambers a hall in the courts of Nature. Let the earth but give you room to stand on; well, look up. Is it nothing to have for your roof-tree—heaven? Breathe fresh air if you wish to live long. In New-England, farmers, who pass their days out of doors, live to an average of sixty-four years. The average age of persons who have in-door occupation is, in Massachusetts and Rhode Island—Shoemakers, forty-three; tailors, forty-two and a half; druggists, jewelers and teachers, from thirty-nine to forty; machinists, thirty-eight and one quarter; printers thirty-six and a half. Fresh air, therefore, almost doubles a man's life, while it more than doubles his capacity for enjoyment."

IN-DOOR LIFE.

"Sitting-rooms, school-rooms, sleeping-rooms —every place occupied by human beings, should be well ventilated. In a school-room, for example, thirty feet square and eight feet high, there are seven thousand and two hundred cubic feet of air. Such a room will seat sixty pupils, and allowing seven cubic feet of air per minute to each person—the least allowed by any physiologist — all will be vitiated in less than

eighteen minutes. And as all the blood in the human system traverses the whole breathing surface of the lungs in about two and a half minutes, every one who breathes such an impure atmosphere for two and a half minutes, has every particle of his blood acted on by the vitiated air, making it less vital, less capable of repairing waste, and of carrying on the functions of life. And the longer such air is breathed, the more impure does it become, and the more corrupt the blood, and the more surely does it lay the foundation for disease and death."

TOWN AND COUNTRY AIR.

The relative difference between the out and in-door air of any locality, in favor of the greater purity of the former, is not more decided than what exists between the air of the country and that of the city, which may in large part be regarded as one of the reasons for the greater healthfulness of those who live in the country. That country air is the purer, is curiously shown by

an English gentleman who for several years has devoted his attention to the condition of the air of towns, and communicates to the *London Athenæum* the result of some of his experiments for ascertaining the amount of organic matter contained in the air of various localities. The process by which this is accomplished consists in finding how much of a solution of permanganate of soda will be decomposed by the amount of air. The process occupies about half an hour. There is as much difference between the back streets of a town and the air of a hilly district in the North of Lancashire as from one to twenty-two. In other words, there was found in the air of a close court twenty-two times more matter capable of decomposing the solution, than there was found in a free, hilly district.

GAS-LIGHTS IN SICK-ROOMS.

There is a cause of impurity in the atmosphere of our dwellings where coal-gas is burned, which demands attention, especially as many persons sleep with a small jet of gas burning all night, and it should be particularly noted in the sick-chamber, both for the sake of the watchers and the invalid.

When gas is first generated from soft coal, it is combined with many deleterious ingredients. Investigation and experiment have by degrees found out the means of purifying it of its most objectionable and offensive combinations; but the best means of chemical purification yet found out, still leave some sulphurous compounds, which, when burned, yield sulphurous gas. Experiments prove that in burning one hundred cubic feet of London gas, seven and a half grains of sulphur are yielded in summer, and ten in winter, having pernicious effects on the human economy, as well as tarnishing the

pictures, gilding, and furniture. It is scarcely doubted that means will be found, in the prosecution of chemical experiments, which will still further purify the gases burned in our dwellings.

Not only is there a marked difference between the out and in-door air of any locality, and between the air of the town and that of the country, but also between the air of different localities in the country; and the instincts of the people in all climes seem to have led them to the most healthful places. For example, it is every where known that the hill country and the sea-shore are healthful above all other localities; hence they are places of general resort during warm weather, and when epidemics prevail. It has lately been ascertained, that an unfamiliar constituent of the atmosphere is found in greater abundance on the mountains and the sea-shore than elsewhere. This constituent is called "OZONE," which means an "odor," from the fact that

where it is found in abundance a smell is perceptible, similar to that noticed at the "ANODE," or positive surface in electrical operations. Very little is known, certainly, of its nature or properties, beyond the fact that it seems to abound in peculiarly healthful situations.

RELATIONS OF AIR.—AIR AND LIFE.

Prof. E. G. Dalton shows that "the oxygen of the air is the great agent for renewing the blood, eliminating impurities, warming the body, and giving a healthy tone to all the vital powers. A full supply of pure air, then, is as essential to life and health as an adequate amount of unadulterated food. If stringent laws are made against manufacturing or selling unwholesome bread, which may be consumed two or three times a day, still more should health-officers and legislators make provision against impure air, which is drawn into the very life-blood eighteen times a minute. The extent, constancy, causes, and consequences of

this poisoning process, should be well understood by all.

"The air becomes unfit for use in two ways—by the abstraction of oxygen, and by the introduction of deadly elements. From many and careful experiments it is found that each inspiration takes from the air about thirty-five per cent of oxygen, or seven per cent of the whole air, which lessens its natural quantity one and one third cubic feet in a minute, and during the same time one cubic foot is vitiated by exhaled carbonic acid. For the combustion of five pounds of Lehigh coal in an hour, six hundred feet of air must be withdrawn from a room, or ten feet per minute. This is safe, if air is copiously supplied; if not, oxygen is diminished, and foul gases are driven into the room, corrupting the air as in respiration. In the process of lighting, every cubic foot of coal-gas consumed takes from the air about two and a half feet of oxygen, and produces two feet of carbonic acid. A burner consuming one cubic foot per hour, would spoil a hundred for breathing in the same time, or one and two thirds feet per minute. Add to these agencies the exhalations from the skin, polluting two or

three feet per minute, and we have before us the startling fact that a single person in a close room, with a furnace and light, renders six or eight feet of air unfit for use every minute. How appalling, therefore, in crowded halls, over-heated, brilliantly illuminated, and badly ventilated, must be the consequences to the unthinking multitude who draw in the seeds of death at every breath!

"The results, in general, are, nature's supplies are cut off, the vital powers famish, and poisons are introduced to obstruct the feeble action which remains. The recuperative powers of the body are thus weakened, and the noble framework of man becomes the peculiar soil of contagious and chronic affections. Cholera works its way most mortally among the inmates of filthy and unventilated apartments. The air, corrupted by marsh or typhoid miasma, induces the various types of fevers. A 'truly scrofulous disease' is supposed to be caused by a vitiated air. And 'consumption is,' too often, but 'scrofula localized in the lungs,' originating in impure air. Blanketing and curtaining infants from the life-giving breezes of heaven are a more efficient cause of their mortality than

parental vices or destitution. The per centage of deaths in New-York is greater than in Philadelphia, because there are more underground, crowded apartments, whose inmates are poisoned by noxious gases, and from which deadly effluvia ascends to loftier habitations.

"The results of vitiated air on the mind are as palpable and awful as on the body. If the brain, the organ of thought, is supplied with unvitalized blood, the order and activity of the mind's thoughts can not be sustained. Hence all school and study rooms should be amply supplied with pure air. Bad air 'takes off the chariot-wheels' of thought, pinions the wings of imagination, bewilders reason, dissipates memory, makes a general wreck of the intellect, and distracts all the passions and instincts of man's nature."

"Few persons," says another writer, "imagine that their lungs are inseparable from their thoughts. Not that the pulmonary structures and functions occupy the heart of thoughts; but that as a man inspires the physical atmosphere, so does his mind conduct itself as to thinking, willing, and wishing. For example: If a human being should be imprisoned in a small

room, not properly ventilated, and not replenished with fresh air from without—so that his breathing would be confined to the same atmosphere for a great number of hours each day—the consequence would unmistakably be exhibited in the mental operations of the victim. He would think in a circle, because he would breathe in a circle, and his digestion would be imperfect. His thoughts could not bound cheerily over the landscape, because the atmosphere of the landscape would not enter his lungs. Physicians and patients are habitually imagining that a 'change of scene' is the secret of benefit in many cases of nervous prostration. Although there is truth in this impression, yet it is far from divulging the whole cause of the salutary results that sometimes follow pilgrimizing away from home in quest of health. When once the real secret is intelligently known, and when the knowledge accruing therefrom is promptly applied by the possessors, then may the multitudes of sick ones save themselves the fatigue and expense of journeys. If you wish to travel for recreation, first get a stock of health to sustain you, in the shape of Air, Light, and Electricity.

"The shortest route to firm health is through the lungs and nerves, which supply them and the stomach. Small lungs—small minds; or, large lungs and bad air—large minds and few thoughts."

THE BREATH OF LIFE.

Adam did not become a "living soul," did not assume humanity, did not become a human being, as we are, and in the full sense of the term, until the breath of life was introduced into his body; nor does the unborn being become "alive" until the external atmosphere has been introduced into the lungs through the nostrils. "And the Lord God formed man from the dust of the ground, and breathed into his nostrils the breath of life, and man became a living soul." (Genesis 10 : 7.) The human machinery is never set in full and perfect motion until the air lights up the fires of life. And imponderable and viewless as that air is, its agency is necessary to sustain life. Men say that food strengthens and nourishes them; but

it gives no strength, imparts no nourishment, until the air has acted upon it. We sit down to a dinner; in five hours, what we ate has been converted into a homogeneous substance called "chyme;" it then passes out of the stomach into the smaller intestines, and becomes a sweetish milky fluid, in which state it is absorbed and carried into the heart, into which it falls the moment the blood falls into it, which has come to it through the veins from its circuit of the body, all which is impure and black. This black blood and light-colored nutrient chyle are mixed together in the heart, and sent direct to the lungs, where it is contained in numberless minute vessels or channels, the sides of which are so thin that the air breathed passes its life-giving virtues through the sides of these vessels, and is at once incorporated into the mixture of milk-like chyme and the impure black blood, and when these three meet, and not before, a transformation is effected with the rapidity of lightning; the red blood of life

is formed, and the very next instant, full of nutriment and vitality, it passes back to the heart, to be instantaneously dashed to the remotest ends of the system, imparting instant animation, renovation, and strength to every fiber of the body; and in proportion as the air is impure in quality or deficient in quantity, this strength, renovation, and animation are imperfect. Without air, pure and fresh, thus supplied to the lungs, in vain would we seek for rest and renewal in sleep on beds of down; in vain look for manly vigor from the richest, purest food, and the best ever placed before a hungry man! So that, whether in eating or sleeping, the pure air of heaven is essential to existence itself, essential to health of body and to activity of mind; for it feeds, invigorates, and regenerates both, bringing us back to the felt necessity of having the purest air possible in our chambers, where we spend at least one third of our entire existence.

It has been shown, then, that pure air and a

plenty of it during the hours of sleep, is indispensable to our well-being; that all adulterations of it tend to destroy health, and eventually life itself; that one of the most constant, general, and fruitful sources of atmospheric impurity, is found in the practice of two or more persons sleeping in the same bed, or in the same small room, and that consequently the habit should be abandoned in every case where it is at all practicable; the reader being charged to remember, however, that any necessity which may seem to exist for its continuance, does not alter the nature of the evil, or diminish its amount; consequently, if it be in truth a necessity in any case, it is an unfortunate one.

EXCESSIVE CHILD-BEARING.

However numerous a household may be, the parent does not feel willing to spare any one of the children, and there is a prevailing sentiment, more pious than true, that if Providence sends children, he will in some way pro-

vide for them. It will not be denied that many children die of neglect and want; the neglect arising from the criminality of parents, and the want from their idleness, improvidence, or unthrift; and further inquiry will satisfy the reflecting, that whenever a family is overburdened with children, it is directly owing to the fact that the parents have brought the evil on themselves by an unwillingness to observe a proper self-denial, the very key-stone of practical Christian character; precisely as it is the want of self-denial which leads many into bankruptcy and degradation and crime, the self-denial which would have enabled them to have lived within their means. That many a woman sinks into a premature grave as the result of bearing children too rapidly, and that, as a consequence, those she has left behind her are, in multitudes of cases, neglected, and grow up uncared for, to become a burden to society afterwards, is beyond denial. It is just as plain that these evils could have been prevented

wholly, by a simple restraint on indulgence, and which the measures proposed in these pages would make comparatively easy of accomplishment, as it is less difficult to resist hunger when food is not seen than when it is spread out before the eye and within easy reach. These suggestions will bear more consideration than the short space allowed them would seem to entitle them to, and they are not matters of minor importance, for they affect the happiness and well-being of those alive and of those yet unborn. Denials from two days before until eight after the periods, with a second's cold sitz-bath the instant after each occasion, are thought perfect efficients.

CLOSE ROOMS AND CONSUMPTION.

It is stated on good authority that "in England one person in forty-five dies every year; in France, one in forty-two; in Austria, one in thirty-three, and in Russia, one in twenty-

eight. About one sixth of all the deaths in civilized countries are caused by consumption, and this notwithstanding the fact that in some countries it is absolutely unknown, and in others prevails very little. Where it does prevail it is really 'the great destroyer.' One third of all the deaths in England are from tuberculous diseases. The advantages of the equable climate there are more than counterbalanced by the excessive humidity of the atmosphere. More females than males die of it in some places; more persons in sedentary and indoor life than among those of active out-door pursuits. The disease is scarcely known among the savage races of men. It prevails most and is most fatal in low situations, where the air is surcharged with moisture and is less frequently changed by the wind. In fine, all the facts go to show that the great cause of consumption is lack of pure and vitalizing air.

"Miss Nightingale has such faith in the healing and restorative powers of the air, that she makes a full and free supply of it, night and day, the first condition of successful hospital treatment. In the English hospitals the space allotted to each bed is twenty-one hundred

cubic feet, and Miss Nightingale insists that this is not sufficient for a single night without constant change by ventilation. If this be so, what must be the effect of sleeping, as half the people in this country do, in little eight by ten bed-rooms, with the windows and doors tightly closed, and perhaps the heat of a furnace or stove for warmth besides, in the winter? The French hospitals provide for the complete renewal of the air of a sick-room every hour. We sleep in about a thousand cubic feet of air for six or eight hours, without renewing it at all—and sometimes two or three persons in that confined space. The fetor of a chamber that has been thus occupied is a sufficient demonstration of the unfitness of exhausted and stale air to be received into the lungs; and the pallor, headache, and lassitude experienced in the morning by those who sleep in these close rooms show very clearly that the repose which should have renewed the vital powers has only been the occasion of poisoning them. What wonder that the lungs, denied their natural aliment, and fed on poisonous malaria, refuse to perform their functions and go to premature decay! We have no doubt that this one sin against na-

ture of sleeping in impure air is the great source of nearly all the lung diseases which sweep so many to early graves in what should be the bloom and vigor of life. The idea that the night-air is hurtful is a mere prejudice. It is the dead air of our sleeping-rooms, laden with foul animal matter, that poisons us, corrupts our blood, and destroys our vitality.

"There are other minor causes of consumption, such as the breathing of air filled with dust or unwholesome vapors, as in some of the mechanic shops and chemical laboratories. But with a little ingenuity properly applied, most of these exposures might be obviated. Even so simple a thing as the carpet-sweeper, by preventing the filling of our rooms with fine dust, is a great relief to the lungs of the women of the household. Consumption is not considered contagious in the ordinary sense, but there can be no doubt that sleeping in a close room with a consumptive person is decidedly unhealthy, and the destruction of whole families by this disease may be quite as much due tc this as to any inherited pravity of blood."

It may not be amiss still further to impress

the reader's mind with the truth that pure, fresh air is essential to health, and that the very existence of humanity is as much dependent on it as that of the fish on water. These impressions may be most agreeably and instructively made by showing how pure air acts on the blood in the lungs, and by what laws these actions are regulated.

The lungs themselves are a multitude of air-cells or bladders, of all sizes, from the twentieth part of an inch in diameter downwards. These are filled and emptied through the wind pipe and its branches at every in and out-breathing. These air-cells are made of the thinnest kind of membrane, on the sides of which multitudes of blood-vessels are spread out; so while the blood-vessels are full of blood, the air-cells are full of air, the air pure, the blood full of impurities; but the blood and the air never come in actual contact; two membranes intervene, the membrane of the blood-vessels and that of the air-cells; nevertheless

the life of the air passes into the blood as it were, and the death, the impurities of the blood are transferred to the air in the lungs, and the breath which was an instant before all purity, becomes in that instant so impure, that it is utterly destitute of sustenance; so much so, that if re-breathed the moment it passes from the mouth, without any admixture of other air, immediate suffocation would be the result. It is known by actual observation, visual inspection, that when the blood goes to the lungs it is dark-colored, called "black blood;" on coming from the lungs it is of a bright, sparkling red, and that if a person does not breathe, it remains black. The fair inference is, that this change is made by the air taken into the lungs at each breath, and it is easy to see that this change of death-blood into life-blood is more or less perfect according to the purity of the agency which effects it; that is, according to the purity of the air. And so necessary is it that this change should take place, that if it is inter-

rupted for a single minute, we die. For a few minutes an impure air may not make any very decided change in the bodily feelings or conditions; but if it is continued during the sleeping hours, which amount to one third of our lives, its effects must be as pernicious as they are wide-spreading. Hence the reasons for the suggestions of these pages, the design of which is to use all practicable means for furnishing a pure air to sleepers, and to remove all the causes, which it is practicable to do, of deterioration, of which small and crowded sleeping-apartments are among the chief.

But to show more clearly that the air which is breathed into the lungs is the agent of blood purification and of attendant health and vigor, it is further proven as follows: If the black blood of an animal is put into a bladder the moment it is drawn, and the bladder is suspended in a cool, pure atmosphere, the blood next the membrane will soon be seen to be changing to a redder color. This is explained

by the fact that the air is composed of two constituents—oxygen and nitrogen—the former is the life-giving principle, the latter contains no life whatever, so that it is the oxygenical constituent of the atmosphere which renovates the blood. Again, the principal constituents of the impurities of the blood are carbonic acid and water. All substances in nature have their likes and dislikes, their affinities and their repulsions. The affinities seek each other, the repulsions stand off or retire. The oxygen of the atmosphere has such a liking, such an affinity for the blood, that it breaks down, as it were, the thin barriers of the air-cells and blood-vessels, and is embraced, absorbed by the blood. On the other hand, the carbonic acid contained in the blood has such an affinity for the nitrogen of the atmosphere which was left behind, all alone in the lungs by the oxygen, that it also rushes from the blood-vessels, dashes through the two thin membranes into the arms of the nitrogen, forming the union so well

known under the name of "bad breath;" and the more impure the blood is, the greater the degree of that bad breath.

The curious reader will find an analogous exhibition of the more hidden properties of matter, of chemical affinities, by leaving a mixture of alcohol and water in an uncorked bottle; the alcohol having a greater affinity, a greater liking for the air than the water has, begins at once to pass out of the bottle and mingle with the air of the room, as will be known by the odor of the apartment, and will continue to pass out until there is nothing left in the bottle but the water. But fill another bottle with a similar mixture, and place a thick membrane over the mouth; in a few days all the water will be gone, while the alcohol remains. These experiments illustrate the doctrine of chemical affinities, by the laws of which the air we breathe has such an important influence in purifying the blood, thus giving strength to the body, vigor to the brain, and purity to the

heart; and to stint ourselves for a third of our entire existence in the supply of agencies upon which these all-important characteristics depend, is "unwise, unnatural, and degenerative."

Another illustration of this doctrine of chemical affinities is found in the experiments of Lewis, of London, in the examination of the exterior of twenty-two thousand leaden coffins, and the contents of a large number in the church-vaults of the British metropolis, showing "that nitrogen and carbonic acid gases, holding animal matter in suspension, unperceived, but steadily penetrate through, and escape from the pores of leaden coffins, and disappear in the air; so that by the end of fifty or one hundred years, nothing but dry bones remain; and this escape may go on, though the coffins are uninjured. It is a rather ghastly thought that, of so many coffins breathing out their contents to mix with the air of the world overhead; and the merry Londoners breathing in the sublimated remains of friends and progenitors, supposed all the while

to be, 'after life's fitful fever,' sleeping well! Another authority, Mr. R. V. Tuson, believes that in many instances there is a corrosion of the leaden coffins from within, forming a peculiar anhydrous carbonate of lead, and often destroying the leaden plates to a mere shell. Both recommend a discontinuance of burial-cases of this material."

CHAMBERS FOR THE SICK.

FLORENCE NIGHTINGALE, after a wide personal observation and experience, says of the rooms which the sick occupy:

"It is very desirable that the windows in a sick-room should be such that the patient shall, if he can move about, be able to open and shut them easily himself. In fact, the sick-room is very seldom kept aired if this is not the case—so very few people have any perception of what is a healthy atmosphere for the sick. The sick man often says: 'This room, where I spend twenty-two hours out of twenty-four, is fresher than the other, where I only spend two.

Because, here I can manage the windows myself.' And it is true.

"Do you ever go into the bed-rooms of any persons of any class, whether they contain one, two, or twenty people, whether they hold sick or well, at night, or before the windows are opened in the morning, and ever find the air any thing but unwholesomely close and foul? And why should it be so? And of how much importance is it that it should not be so? During sleep the human body, even when in health, is far more injured by the influence of foul air than when awake. Why can't you keep the air all night, then, as pure as the air without, in the rooms you sleep in? But for this, you must have sufficient outlet for the impure air you make yourselves, to go out; sufficient inlet for the pure air from without, to come in. You must have open chimneys, open windows, or ventilators; no close curtains round your beds; no shutters or curtains to your windows; none of the contrivances by which you undermine your own health, or destroy the chances of recovery of your sick."

As proof, if more is needed, of the impure state of the atmosphere of a chamber, or, in-

deed, any inhabited room, the fact is given, that a pitcher of ice-water placed therein, will absorb all the gases of the apartment by its power of condensing, and, as it were, attracting them by its greater coldness, and thus becomes too filthy for use. A single pint of water will absorb a pint of carbonic acid gas and several pints of ammonia without increasing its bulk, and carbonic acic gas and ammonia are the constituents, in great part, of the air that comes direct from the lungs; hence, while ice-water purifies the air of a chamber or sitting-room, it becomes utterly unfit for drinking or cooking purposes, or even for washing the face and hands. These things being true, water which has stood exposed in any human habitation for a single half-hour is too disgusting for use whether for drinking or cooking. In fact, stagnant water anywhere begins on the instant to become corrupt.

Nothing containing moisture should be allowed to remain in an inhabited room. Recently, a gentleman in perfect health, without

exposure of any sort, became suddenly nauseated in the middle of his meal, and remaining so without improvement, notwithstanding entire abstinence from food, he concluded the cause of it remained in existence and on close investigation, ascertained that a paste-cup had been inadvertently left in his sitting apartment, emitting a most sickening odor. An analogous case occurred in England. In eighteen hundred and fifty-four, a man in perfect health was placed in a room in London, and in a few days died of putrid fever. The next, and the next, and the next occupant became successively ill. At length, the authorities ordered an examination of the premises, when the cause was found in several pounds of paste and wall paper which had been covered up out of sight, the decomposition in progress, throwing out the destructive gases. Another English house became so notoriously unhealthy that no one would live in it free of charge; the cause was found in new paper having been pasted on the old for successive generations perhaps.

LIGHT AND AIR.

It is an encouraging sign of the times that the editorial mind of the country is waking up to the importance of breathing a pure atmosphere. And for the sake of presenting an important idea in every variety of phase, the various extracts have been given in the preceding pages, to which may be added another from the Boston *Transcript:*

"Our parlors have become simply furniture warerooms; not 'show-rooms' even, for light is essential to a good show of any sort; they are mere places for the storage of carpets, pictures, and chairs that have cost money, and have, no doubt, a money value, but whose office is a sinecure, as far as making a comfortable home is concerned. On calling to see a friend, we are shown into an utterly dark and airless room. After a long time she appears, or something appears, of which we can dimly discover the outline. If she is very amiable, she remarks, by way of conversation, 'this room is rather dark,' and raises one of the various coverings of the window about an inch. There-

upon comes in a light streak of sickly hue, that makes the previous darkness more visible. You have the pleasure of hearing her voice, without the slightest notion of her color, expression, or looks generally. After you escape into the cheerful brightness of out of doors, she steps back into the room, drops the shade closely again, and trips up a darkened stairway into another dark room, there to sew, read or write, all the time straining her eyes to the utmost, in her efforts to see in the dark. Her eyes 'trouble her very much'—she 'has constant pain in her eyes and head'—she has been to this oculist and to that, and has paid large sums of money, and 'is nothing better.' They all tell her one thing—she 'must rest her eyes'—she 'uses them too much,' and so on. No part of this is true, as she has never used her eyes in any good sense, though she has always abused them. About every third person of her acquaintance is affected in the same way, and 'Oh! dear, what can the matter be?' Her grandmother—all their grandmothers in 'point of fact'—at eighty-two, could sew the nicest and most exact seam, and read the finest print in the evening, with the aid of the usual glasses.

She lived all her long life in rooms whose shutters were never closed save at night, and curtains of any kinds, there were none. The sun in her day did not harm the rich Turkey carpets that covered the floor, or the 'portraits by Copley' that hung upon the wall. Her aunt, at seventy-one, can make as elegant a button-hole as eyes ever saw; can embroider muslin and cambric in beautiful style, and in fine, plain sewing has few equals. Her mother, at sixty, could see to mark her own name in full, eighteen letters, with her own hair, on the finest linen-cambric handkerchief; and, at sixty-nine, can do almost any thing that can be done with a needle, in the most workmanlike manner. These three ladies spent thirty years of their lives in full view of Boston harbor, and the use of a spy-glass was one of their almost daily recreations. These are not exceptional cases. Any lady can recall similar facts among the circle of her friends between the ages of sixty and eighty years. But our modern lady is 'troubled with her eyes;' she has, in fact no soundness in her. From the crown of her head to the sole of her foot, she is a bundle of ailments, produced by broken laws. Horace

Mann has well said, that people who shudder at a flesh wound, or a tinge of blood, would confine their children like convicts, and compel them, month after month, to breathe quantities of poison. It can not but greatly impair the mental and physical condition of children, to send them to breathe, for six hours a day, the lifeless and poisoned air of some of our school-rooms. Let any man who votes for confining children in small rooms, and keeping them on stagnant air, try the experiment of breathing his own breath only four times over; if medical aid be not at hand, the children will never be endangered by his vote afterwards."

VENTILATION OF CHAMBERS.

In cases where there are no windows which can be used for purposes of ventilation, or where, from any cause, the door must be kept closed, a fire, burning in an open fire-place, answers an admirable purpose. But if a fire makes a room oppressive, an artificial light should be kept in the fire-place—such as a candle or two, or a large lamp, or, better still, a jet of gas, conducted

from an ordinary burner by means of a flexible tube. By this expedient a considerable draft may be created through the fire-place and upwards at a small cost, and without adding to the heat of the apartment. This would be an admirable ventilator for sick-chambers; and in cases not a few, would do more to promote restoration to health than all medicines; for pure air is the best convalescent in the world.

VENTILATION OF DINING-ROOMS, DRAWING-ROOMS, AND FAMILY APARTMENTS.

Any room, closed even for a night, whether in winter or summer, acquires a disagreeable closeness, perceptible on the instant of entering. Many drawing-rooms are not opened until ten or eleven o'clock in the morning, when, especially in cities and large towns, passing vehicles have filled the atmosphere with dust, making it unadvisable to open the windows. In such cases, and others similar, the jet of gas in

the fire-place will answer a good purpose. But above all the devices which will answer most perfectly in warming single rooms, is the "Low-down Grate," patented several years ago by the Messrs. Andrews & Dixon, of Philadelphia, in reference to which, HALL'S JOURNAL OF HEALTH for October, two hundred and twenty-sixth page, volume seven, says:

"In cheerful comfort there is nothing equal to a blazing wood-fire, on a commodious hearth. The very thought of it carries us backwards to days of unbridled gladness and joyous youth and genial sunshine. For purity of atmosphere and consequent healthfulness, there can be no superior to the old-fashioned fire-place, 'and-irons,' back-logs and fore-sticks, with the broad bed of flaming red coals!

"Next to the wood fire-place, is the 'Low-down grate,' of recent introduction, suitable for burning every kind of fuel; wood, soft coal, anthracite, red ash, bituminous, Liverpool, Cannel, any thing. It is in reality a 'fire-place;' the fuel is placed flat on the hearth, on a level with the floor, the jambs are broad and flaring,

there is but little use for a poker or 'blower,' and hence no dust. The ashes fall through a grating into a receptacle which may be emptied daily, or are conveyed through an iron pipe into a close brick chamber in the cellar, to be removed once a year. By this contrivance the feet are easily warmed, and are kept so; there is no danger of the coals falling on the floor or carpet, and the fire is made to burn more or less fiercely as easily as in an air-tight stove. This is written after a winter's trial. At an expense of less than three tons of coal, or two hundred and forty bushels, the thermometer on the wall opposite to the fire-place, in a room two hundred and fifty feet square and twelve high, was kept at sixty-five degrees when the mercury was in the neighborhood of zero without, the heat being derived from a broad bed of glowing coals over two feet long. These coals being on a level with the floor, keep the feet delightfully warm. The air for combustion is obtained from the cellar or the street; hence the atmosphere of the room is simply pure air warmed, and has the genial heat of a wood-fire; hence, also, there is none of the feeling of heaviness, sultriness, and oppression

which is instantly experienced on entering a furnace or stove-heated apartment. We certainly feel that the perfection of house-warming in our country at present, is to have a low-down grate in each sitting apartment, while the extra heat is economized, to be thrown into chambers, sufficient to take off the chilliness or dampness when retiring or rising in the coldest weather. If families are so constituted that there must be additional heat, at least in cases of sickness, or company, or extra severe weather, when it may be desirable to modify the atmosphere of the halls between the temperature of out-doors and that of the sitting-rooms, Andrews and Dixon's furnace answers the purpose most admirably, which, by being placed in the hall or cellar, and so contrived that the warm air given out can not come in contact with red-hot iron, supplies an atmosphere for breathing which is pure and exhilarating. Such was our practice last winter, the fire being kindled in the portable furnace in the lower hall only for seven days during the whole season, and these were, not at times when the weather was the coldest, because then the air was purest, driest, and most bracing, but

for the days coming after the coldest ones, when there was an ugly damp chilliness in the air, which, by abstracting the heat rapidly from the body, produced a stronger impression of coldness than when the weather was twenty degrees colder, but still and dry, for it is not in the very coldest weather, when zero is hugged by the mercury, that 'colds' are so much taken, but when the air is raw from being saturated with dampness. It is in thawy weather that furnaces should be heated up, if ever. By this arrangement there was scarcely a cold in the family, varying in age from five to seventy-five, during the whole winter.

"The several sizes of the low-down grate are furnished and slipped into the ordinary fire-place at a cost of from thirty to fifty dollars each, except when finished off with German silver and although these cost from ninety to a hundred and fory dollars each, Southern gentlemen are not deterred by the price, in consequence of the conviction of their superiority in the direction of healthfulness, cheapness, and their special adaptation to house-warming purposes where furnaces are never needed—where transient fires are so often desirable.

"A gentleman of taste and observation, near Natchez, having used these grates for several years, and is now building one of the finest residences in Mississippi, has introduced into it nineteen of these grates, six of which are of the costliest kind, as in his estimation nothing hitherto devised is equal to it, not only as regards a cheerful, balmy warmth, but for the purpose of a thorough ventilator, whether for the drawing-room, the parlor, or the chamber."

As an evidence of intelligent appreciation of the low-down grate, nearly every prominent physician in Philadelphia uses one or more of them. As to durability, there is no reason why they should not last half a century, needing no repair the mean while, excepting that of replacing half a dozen fire-bricks in the course of years. Under all the circumstances it seems to be the perfection of house-warming, for up to this time it has not in any known instance failed to give comfort and satisfaction, and generally has exceeded expectation, and what is of un-

thought of importance, an ordinary grate can be taken out, the low-down slipped in and be ready for use in half a day, winter or summer, unless in cases where the ashes are to be conveyed into the cellar, when a longer time is required, several days perhaps. When the ashes are to be received into a pan and are not conveyed into the cellar, a blower is needed to kindle the fire.

There is a growing disfavor against warming houses by furnace heat. No plan has ever yet, in this country, overcome the well-taken objections to this method of heating family dwellings. It is costly, insufficient in very cold weather, especially in exposed situations; the furniture and the wood-work of the building itself is invariably injured, necessitating frequent repairs and renewals, and, more than all, an insufficient ventilation, with a close, oppressive and pernicious atmosphere prevails, which being heated, and the chambers being in the upper stories, the

effect is to give the sleepers the warmest and most impure air in the whole establishment. The grave objections to hot-water pipes have been already named, and are insuperable. Under these circumstances, public attention has been directing itself to the application of steam, as a house-warming agent. It will perhaps be acknowledged by those best acquainted with the nature of steam, that it is capable of being made the most efficient, manageable, and economical of all agents yet known for communicating and distributing artificial warmth. It occupies the same superiority of position in the heating department that illuminating gas does in the department of artificial light. Being of about the specific gravity of gas, and of an elastic and volatile nature, it is peculiarly calculated to flow to the desired point, even through long and circuitous sections of small pipes. It expands seventeen hundred fold over the bulk of water from

which it is generated, and in returning to water, imparts one thousand degrees of heat to the air, which in water and in an uncondensed state would be latent and unavailable. It admits of the most compact form, both as regards the space occupied for its generation, and the surface employed to heat the air. But to construct a steam-warming and ventilating apparatus which shall be simple and substantial, not liable to get out of repair, and entirely secure under the care of common domestics, is the great desideratum. William C. Baker, of the House of Baker, Smith & Co., of New-York, has for a number of years directed his attention to the subject, and has published several monographs in reference to it. Under his auspices a manufactory has been established, and is now in successful operation, for the exclusive object of warming and ventilating private dwellings by the agency, not of hot air nor of hot water

but of steam, which has been hitherto looked upon as being only a motive power.

In the hot-air furnace, which is the most common method for heating, the fire is not within the dwelling apartment, hence there is but one reservoir for the heated air which is conducted by tubes to the different parts of the building. These tubes must be of different lengths, both in their horizontal and perpendicular courses, the longer lateral tubes sometimes not conveying any heat, while the shorter horizontal and the longer perpendicular ones may have the concentrated heat of the whole furnace. Further, within one brick inclosure, there are the furnace with its red-hot heating surface, the fire, the ashes, the smoke, and all the noxious gases set free by the consumption of fuel, while the only intervening partition between these and the hot air we are to breathe, is a single thickness of frail cast-iron, with the numerous joints, already opened by al-

ternate expansion and contraction, to admit of the discharge of the above-named gases and other impurities into the air in process of heating, to be thence sent to the different apartments to be breathed by the occupants. Baker's plan claims to obviate these objections by having several reservoirs. His boiler has a simple self-regulating attachment which controls the draft and the accumulation of steam to a nominal pressure. This boiler, with its gases, ashes, cinders, etc., is located at some remote point from the warming surfaces, and from this, instead of one, there are several steam ducts leading to the different warm-air chambers, which are in the cellars, but directly beneath the registers or points of exit for the warm air to be conveyed into the different apartments. Exterior air is supplied to the different warm-air chambers through one main trunk, branching off to the different points. The temperature of the steam-

heated surface is always kept at one low unvarying point—that is, at about two hundred degrees, which is below the boiling point, instead of being from three hundred to two thousand degrees, as is the case with the hot-air furnace. The fire requires to be fed, to keep up an even supply of heat, but twice in twenty-four hours. A fresh fire will seldom need to be built.

There are no valves or dampers whose adjustment depends upon the care and judgment of any one. Only the simple and all-important items of fuel and water are required to be supplied. The supplying of these must, under any circumstances, be dependent on human intelligence. The habit of the common domestic in the kitchen, of supplying with punctilious regularity, every morning, the water to the tea-kettle, and the fuel to the stove, amply qualifies her to attend to this duty — no more skill, judgment, or trouble is required in one case than in the other.

The simple act of shutting off or letting on the heat, by turning the registers, whenever agreeable to the occupants of any part of the house, does, of itself, regulate the fire, the accumulation of steam, and the amount of air to be warmed.

CROWDING, DEMORALIZATION AND DEATH.

The Rev. H. W. Warren, of Boston, in a valuable article on the intimate connection between "good morals and good health," reports on good authority: "Of the children born on Beacon Hill, Boston, not one third as many die the first year, as of those born on Broad street, near Fort Hill. The former are the children of the richest people in the city; the latter, those of the poorest. The former have feeble constitutions, but good care and medical attendance; the latter have, for the most part, rugged constitutions, but perish; some for want of attention, some from

deliberate design. Carelessness and ignorance can not account for the vast disproportion of deaths among children born within a mile of each other. The state of morals has much to do with it. In one place, all is outwardly moral; in the other, all is immoral, outwardly and inwardly. Children of passion have a perilous future. Passionate themselves, they contend with furious parents—a most unequal contest. Living evidences of shame, they are more the object of hate than of love. The tender care which they require, is displaced by unreported neglect and abuse, which no legislative enactment can remedy.

Immorality forms for itself all manner of destructive habits. Late hours come to be the rule, and seasonable retiring the rare exception. Intoxicating drinks follow, and, as a matter of course, treble crime, because they influence the passions, and bereft of reason, the victims find their gratification in haunts where consuming disease has made its home—the body is left

a wreck, the mind in ruins." Thus does the reader return to the proposition with which the subject opened—that crowding degrades individually, as in communities, weakens the body, impairs the mind, and corrupts the heart; that roominess, with pure air and the blessed sunlight, elevates, energizes, and refines; and these having been demonstrated, the book may very appropriately here close, by merely adding that only the few will practically apply the suggestions of these pages. But there must be a beginning in all things. The time may come when higher principles will prevail; when there will be more moral courage, more force of character, more strength of will; when to a greater extent than has ever yet been seen in the world's history, the masses will act with a motive founded in wisdom, purity, and benevolence in the conduct of life; when humane and generous and loving self-denials will be the rule, and selfishness and indulgence the rare, the very rare exceptions. May the good day coming speed on right quickly!

ADDITIONS—SLEEPING WITH OTHERS, ETC.

WHILE the first edition was passing through the press, the following case came under the author's attention:

"My little son, eight years old, is lively and well in all respects, as far as I can judge, in the day, but at night he wakes up and screams in the most distressing manner. He awakes frightened almost every night for a year. He has been subject to this for several years, but it is getting to be a distressing case. I almost dread to go to sleep. He sleeps with me, and once every night, sometimes twice, he springs as quick as lightning, screams the most soul-piercing screams, and I take him in my arms, and he looks back, with horror on his face. I could not, unless you saw it, give you an idea of how distressing it is. He is strong and lively, playful, and full of fun and life, until he gets to sleep. This happens every night, and often it so shocks me I can not go to sleep for a long time. He takes dinner at one, supper at sundown, of cambric tea with a piece of bread. All my other children are entirely different; they are lively, hearty, and cheerful, and so is he, otherwise."

The directions given were on the presumption that these effects in the child were caused by sleeping in the same bed with the father, habitually. In two months, the report was made that "he had not waked up frightened for a long time." The national troubles at this point put an end to the correspondence. It may be instructive to know under what bodily symptoms the father had been laboring for some years, but whom the author succeeded in restoring to "better health than had been enjoyed for seven years." Age, thirty-seven; hight, five feet seven; broad-shoul-

dered, dark skin, black eyes, and had remarkable health, strength, and activity, never having had any severe sickness; began to chew tobacco ravenously, and became gradually very nervous, from one meal to another; especially in summer, would become so exhausted as to scarcely be able to walk. The least excitement or agitation would keep him from eating enough to sustain his strength until the next meal-time. Then came on chronic diarrhea, aggravated by any unusual intelligence, or shock of any description. "The least feeling like it, or appearance of loose bowels, completely unmans me; I can't help it; and if I was very hungry or exhausted, the occurrence of any looseness kills my appetite. I can not help being alarmed at any symptom of diarrhea, for it has used me up long ago. I am greatly depressed in spirits from the sympathy incident to planning for and nursing my children, and solicitude for them in sickness, for these ten years. My wife is an angel of goodness to me, and I have every reason to be a happy man. Please don't say any thing that might have a tendency to depress me. As soon as I get the least hungry, I become weak and nervous, and the same if there is any cause for anxiety or excitement. Coffee is poison to me; two swallows would distress my head and make my ears feel as if water were in them; at the same time there is a feeling of wanting to draw a long breath. If I talk much, or read aloud at times, I feel as if I had been violently blowing up a fire. Hot weather is ruinous to me." It was in August, when the thermometer had been ranging at one hundred degrees Fahrenheit, that he wrote of the great improvement in his health. This man's nervous system had been so impaired, and his general health so poor, that it is not to be wondered at if a young child sleeping with him constantly

should have its own nervous organization impaired. On being required to sleep in another bed; to go to bed late, but regularly; to sleep on a pillow a little high, so as to antagonize the blood accumulating in the brain; to be waked up about fifteen minutes before the starting and screaming took place, so as to break up whatever there was of mere habit about it; and not only to be waked up, but to get out of bed, walk across the room two or three times, and throw back the bed-covering, so as to allow the confined air to escape, then go to bed again, and avoid sleeping any in the daytime. By these means, and these alone, the starting, etc., began to abate, and to diminish in frequency within a fortnight, and in two months with the results already stated.

A foreign lady with five children, between two and ten, complained, in June, 1846, that for some years she rose in the morning very languid, spiritless, without interest, despondent, want of fixedness of attention, poor memory, emptiness, such as a vessel endowed with sensation might be supposed to feel when emptied of its contents. The uncertainty of what these things meant, and the unwillingness to communicate with a physician, was having such an effect upon her, that she was afraid of losing her mind. The feelings above referred to were more intense in the morning, but gradually subsided, until at the close of the day the inconvenience was unimportant. On examination, it was found that the pulse was about seventy, a little hard, but not otherwise remarkable. She was regular in all the bodily habits; feet not cold—rather inconveniently warm; not specially liable to take cold; appetite good—rather too good; suffered some from headache. These things were immediately connected with the simple fact of sleeping in the same bed with her husband, (than whom few men had better health;) they apparently

had no connection with marital indulgences. If she slept with her daughter, or sister, or mother, or any lady friend, or if she went from home, or remained at home, sleeping alone in another apartment, these symptoms gradually disappeared; and if continued for several weeks, her health became good. She had now been from home two months, and felt "pretty well," excepting the mental disturbance as to causes and ultimate results. Directions were given as to the best means of maintaining the general health, and to sleep alone; for it seemed clear that there were emanations from the husband, or abstractions from her, which were prejudicial to her. She had slept in silk garments, without perceptible advantage. It was very clear that the mind had something to do in the premises, for she remarked in answer to an inquiry, that she had found herself dwelling too much on the thought of these things, and that after striving against brooding over them, she had been better.

BODILY EMANATIONS.

That there are material emanations, distinguishable by the sense of smell, constantly passing from every thing that breathes, is not denied. That every man has a *different* "scent," is proven by the fact that a dog will follow his master through a crowded street or road, although not in sight, keeping his nose to the ground until he can be seen, when he bounds away with his head upwards, because the eye then assists him. An emanation comes from the negro which it requires no nice olfactory to discover. There are some white persons who will scent a room in five minutes after their entrance, to the extent of really sickening delicate organizations. There are most probably emanations of a still more ethereal character, more spiritual than solid or physical. One unknown person entering a room where there is a

promiscuous company, will, without speaking a word, chill the whole party; another will fill it with disgust; while a third will send out a genial influence on every heart. It does not require a very large stretch of the imagination to infer that a combination of the ethereal or spiritual emanations with the more solid or material, may not very reasonably be thought to have a malign influence on a highly wrought or very susceptible organization, especially when brought into so close a contact as that of bed-fellows. It is known the world over, that low typhoid fevers of the most malignant and fatal type are caused by human emanations, by crowding persons in confined apartments. These things being true, there is wisdom in the universal custom of Germany to have all beds single. Such a thing as a double bed would be considered a disagreeable curiosity in that wide-spreading nation. What custom prevails in this respect when the "fatherland" is left, is not known.

UNHEALTHY HOUSES.

A man requires ten cubic feet of air every minute, in order to supply an amount of oxygen sufficient for the wants of the system. The air enters the lungs full of oxygen, it leaves them without an atom, hence that which leaves the lungs is so wholly unfit for breathing purposes, that if re-breathed, unmixed with any other air whatever, it would cause instant suffocation. This unnutritious air is so very light that when out of doors it rises instantly toward the clouds, as may be seen any frosty morning; but when a person is in a close room, this unwholesome air mixes with that which surrounds it, and in a few moments the whole air of any room becomes contaminated, and this contamination becomes more aggravated, more virulent at every breath, and this is the reason of the greater rapidity with which persons

and animals recover from terrible wounds when they have to lie out in the open air, with nothing but water to drink and roots or berries to eat for days together, when in fact they would certainly have died if they had had all the comforts of home, fireside, and friends. It is estimated that in the course of fifty years, a man, in round numbers, breathes five hundred millions of times, taking into his lungs one hundred and seventy tons weight of air, and discharging therefrom twenty tons of deadly carbonic acid gas. The great aim of those who have an ambition to live long and healthfully should be to rebreathe as little of this pernicious gas as possible, and to have as many as practicable, of the five hundred millions of breaths to be drawn, to be taken from the exhaustless store-house of "all out-doors." If the circumstances of one's life should make it necessary to spend a large portion of existence indoors, then it should be a constant aim and study to have a good ventilation, to facilitate the egress of the bad air, and that its place should be supplied by that which is pure, invigorating, and life-giving.

Cases are given to show that a malign influence has been given to rooms, houses, and circumscribed out-door localities; influences so potent, so invisible, so persistent, and so mysterious, as to inspire an indefinable dread and awe of the place. Napoleon the First once ordered the destruction of a sentry-box in which several soldiers had successively committed suicide. A case was reported officially lately, in Paris, to the effect that a gentleman, without any known reason, destroyed himself; that the person who occupied the apartment before him, and also the latter's predecessor, had committed suicide.

A correspondent writes, April 11th, 1862:

"Our house is situated on the bank of a large river, on rather low ground, with salt-marshes on

one side. So much for the outside. The inside is the great bugbear. A large drain runs through the middle of the house, from front to rear, and through the lawn to the river.

"On either side of the front of the house is a cistern and pump of spring-water, waste-water from both running through this drain, which is directly under the flooring of the kitchen-entry, there being no sub-cellars.

"At the river-end of this lower entry are the two water-closets, contents passing to the river through said drain.

"Now the stench (for it is nothing else) through the house from this sewer is overpowering at times, and always disagreeable. When the wind blows from the river, words can give no idea of the effluvia.

"Before I investigated the subject I was afflicted for years with a constant diarrhea, for which I consulted several physicians, and adopted several kinds of treatment.

"My sister, who slept with me, had three long illnesses of bilious fever. She slept in the corner of our room, just over the drain. The smell in that spot is intense. The bedstead was then removed as far as possible from the noxious corner, plenty of sunshine let in the room, and we have found much benefit from so doing.

"A relative, who was never sick in his life before he moved into this house, has had fever and ague several times; and I am convinced that if it were not that my mother and her four daughters almost live in the open air—riding, driving, walking, and gardening—they would be confirmed invalids from the air generated through this horrid drain."

The gas which lights our dwellings, even when pure, causes great contamination, unless the products

of combustion are speedily conveyed away. But illuminating gas is never pure, it always contains bisulphide of carbon, its burning yields sulphurous acid, which speedily becomes oil of vitriol; another product is sulphurated hydrogen.

If a man weighs himself at bedtime, and again on first rising, he will find an actual loss in weight of half a pound, which amount has gone off from his body and has been distributed through the bed-clothing and the air of the room. If a single ounce of old woolen rags is burned in a chamber, the atmosphere becomes impregnated with the smoke and is scarcely endurable, yet sixteen times that much of foreign material, of dead and refuse parts of the body, are mixed with the air of a chamber, and although not producing so ill an odor, make it sixteen times more injurious, because the air is just sixteen times more impure, has sixteen times less of the appropriate nourishment of the system, showing again the great importance of sleeping in well-ventilated chambers. If two persons sleep in the same room, these pernicious deteriorations of the atmosphere are doubled.

PAPERED CHAMBERS.

This subject has been already referred to, but its importance may be more clearly seen and felt by considering the effects which are observed in the unfortunate poor whose lot in life is to work in coloring green leaves and buds in artificial flowers, with the same substance used in green wall-paper, the arsenite of copper, both copper and arsenic being deadly poisons. These workers are mostly women and girls, and from breathing all day the dust of this arsenite of copper, diffused throughout the atmosphere of the room, soon fall into a most deplorable condition. The derangement of the general health

is all-pervading; debility, nervousness, sickness at stomach, want of appetite, thirst, headache, and looseness of bowels, the throat and gums become sore, the eyes red and weak, running of the nose, which soon becomes sore, and ugly ulcers form on the hands, face, neck, and other portions of the body; in fact, the French government, paternal in its nature, becoming acquainted with the facts, forbade the use of such materials, with the result of more beautiful colors from not unhealthful substances. An inquest was lately held on the dead body of a good-looking girl of eighteen, who had worked in these flowers; the lungs, the liver, all the tissues of the body were impregnated with arsenic. She died in great agony; the wearing of muslin masks over the nose and mouth was not sufficient to protect the lungs from the insinuating poison.

So vigilant is the French government in guarding the health and lives of the industrious poor, that a manufacturer who surreptitiously employed the poisonous and forbidden materials was, in February, 1861, fined and imprisoned, although only a slight eruption had been caused on the hands of a part of his employees. This same poisonous dust and effluvia are constantly escaping from the green paper on the walls of chambers. If there is a poisonous agent in any green color, a drop or two of elixir vitriol discolors it.

In November, 1861, a boy in his fourth year was found in convulsions, which left him apparently half-dead. Just before, the child had complained of being chilly, that he felt sick, would not take any breakfast; during the night he became exceedingly restless. His little sister was also seized with convulsions, followed by violent screaming and copious discharge of the bowels. The boy soon fell into a collapsed state, and died thirty-eight hours after the com-

mencement of the attack. Arsenic was found in the stomach, liver, and intestines. On inquiry, it was ascertained that the children had been playing several days in a small room covered with green flock-paper; the flock brushed off readily. The quantity of the poisonous pigment was equal to one third of the weight of the paper. The coroner and his son experienced headache from sitting in a room hung with such paper. The verdict of the jury was, that the child had been poisoned by the inhalation of arsenical fumes from green paper, and that the manufacturer was guilty of very careless and culpable conduct.

There is ground for the statement that the death of Prince Albert was the result of an illness caused by occupying apartments, the atmosphere of which was contaminated by foul exhalations. Three years before, fevers of a typhoid type were prevalent at Windsor, and even in the royal apartments at the Castle. A thorough investigation was made by competent persons as to the drainage of the locality. This drainage was found most defective at those parts of the Castle where the fever appeared. This defective drainage was at the two extremities of the pile of buildings, the cloisters and the stables, for they were connected with the town sewers; the middle portion of the building had a drainage of its own, in good condition. The royal family occupied this middle portion and escaped the fever; and it is quite probable that the Prince, who was an accomplished horseman and a great lover of horses, would naturally be drawn to the stables, and thus drew "into his nostrils the breath" of death! the more easily as his constitution was not of that vigorous nature calculated to repel diseased influences. A single hour's breathing of an atmosphere loaded with miasmatic exhalations may produce deadly effects, as will ap-

pear from the following incident in another royal family, but a short time before the death of the husband of Victoria the First. It is stated in a letter from Lisbon, in reference to the death of the young King of Portugal:

"It seems the terrible malady to which the unfortunate monarch, and two of his brothers, fell victims, was caught during a visit to Alemtojo, where the air is impregnated with some miasma exceedingly dangerous to strangers. On the evening of his arrival there, the landlord of the house where the royal party had put up, came in to inquire at what hour his majesty wanted breakfast next morning, adding that it could not well be before eight, as it was very unsafe for persons not used to the air of that country to go out early, at least before sunrise; even the inhabitants never venturing abroad until the sun had dispelled the putrid vapors that arise during the night from the soil. Unmindful of this warning, the King was at his window at six next morning, asking for breakfast."

TEMPERATURE OF CHAMBERS.

Human life would be prolonged, and an incalculable amount of disease prevented, if a little fire were kept burning on the hearth during the night, winter and summer, if the doors and windows are kept closed. One great advantage would be, that a constant draft would be kept through the room, fireplace, and chimney, making a great degree of atmospherical vitiation impossible. There is a baleful error in the popular mind as to the nature and effects of pure air, warm air, and cold air. Warm air may be as pure as that of the poles; and although cold air is almost a synonym of pure air, and although it is healthful to breathe a cold air asleep or awake, yet

the breathing of cold air is healthful only to a certain extent. It is not true that because it is healthful to sleep in a cool room, it is more healthful to sleep in a very cold room, not only because, as has been previously stated, carbonic acid becomes heavy under a great cold, and falls from the ceiling to the floor and bed of the sleeper, but because also a great degree of cold in a room where one is sleeping is very certain to cause dangerous and even fatal forms of congestion in the brain and lungs. The same ailments result from keeping sitting or sleeping apartments overheated. In midwinter, the heat of a sitting-room should not exceed sixty degrees of Fahrenheit, five feet above the floor. In the chambers of the sick in French hospitals, the directors are careful that there shall not be a greater heat than sixty degrees or about fifteen centigrade. The temperature of a sleeping apartment for invalids and for children in health should range about fifty degrees in cold weather, and not run lower than thirty-five; there is no advantage in sleeping in a colder atmosphere. Five hundred cubic inches of pure air should be delivered to invalids and sleepers every hour, as is the custom in the best-regulated French hospitals.

NERVOUSNESS, DEBILITIES, ETC.

The nervous fluid is manufactured from the blood; the nerves themselves are nourished and repaired by the blood. The whole nervous system may become diseased in three ways: first, by sudden shocks; second, by excessive action; third, by an unnatural condition of the blood for a long time. That mental shocks, as from fear, or bad news, may prostrate the nervous system, destroy the mind, and life itself, needs no argument. That hard work, insufficient sleep, too great a press of business, or too much time

spent in study, with errors in eating and neglect of exercise, may impair the nervous system, by calling the nervous fluid into action or use, before it is fully "ripe" or matured, is an often observed fact. The remedy, and the only remedy for these is, an avoidance of their causes; and it is as useless to look for relief in medicines, while the causes are in operation, as to prevent the finger from burning as long as it is in the fire. The cure in the latter case must begin with taking it out of the fire. If there is excessive use of any part of the nervous system, whether of the thinking portions or of the propensities, the remedy is rest; non-indulgence in the first place, and then exercising the thoughts and propensities in another direction, to the extent, if possible, of an almost entire forgetfulness of previous studies and appetites. If, for example, a man has studied himself into a diseased condition; if he has had such weighty responsibilities resting on him, that the draft upon his brain is such that he can not get sufficient sleep, and he either becomes deranged or is on his way to the grave by nervous prostration, there is no more safe and certain means of perfect relief, than that of sending out the nervous influence, or "stores," or accumulations, in a different direction—that, for example, of absorbing and pleasurably interesting out-door activities. For the nervous fluids are constantly being generated, as steam in a locomotive, when the fire is kept burning; and if that steam is not expending itself on the driving mechanism, it must be let out upon the air. Destruction is inevitable, unless it finds vent somewhere. Hence the process of cure for all those nervous maladies which arise from over-use, is not merely a cessation of such uses, which is rest, but an employment of the influences in a different direction; because, without such employment, there is no perfect rest, as from mere force of habit these influences

will go out through the accustomed channels. To prevent a country from being devastated by a rising river, not only must a dam be built, but an outlet must be opened in another direction.

A Russian nobleman, childless, was banished to Siberia. His wife was permitted to share his toils and privations. They were compelled to live on the plainest fare, to live in a miserable hut, and work hard every day. At the end of fifteen years, they had a house full of healthy children. In this case, the power of reproduction was lost through those excessive indulgences which are inseparable from a life of idleness and voluptuous ease. Hard-working peoples are the most prolific, as witness the Israelites in the laborious service of Pharaoh. In a recent census taken in one of the towns of Massachusetts, it appeared that although the foreign population was less than the native, a smaller number of Irish families gave more births in one year than a larger number of American. An Irishman does more hard work than an American. Idleness predisposes to an excessive indulgence of the propensities, and this very indulgence increases the desires; thus being over-used, they become powerless, inefficient; that upon which they thus feed inordinately, destroys them. A state of labor is the natural habitual state of man; animal indulgences, incidental, occasional; and in proportion as this law is reversed, in such proportion does it tend to the extinction of the race.

The object of this extended statement, is to impress on the mind that the natural, safe, and efficient means of correcting all nervous derangements, is to give more rest to the parts deranged or disturbed, and so to change the modes of life as to send out the nervous power constantly being generated in the system through other channels, thus giving those which are overworked time for recuperation. It would be

the same if a man were dying with excessive physical exertion. Let the body rest, and give him something to engage his thoughts pleasantly; send the nervous system out of the body, through the brain.

Next to over-indulgences as a cause of nervous disturbances, is an imperfect assimilation of food, that is, indigestion, known as dyspepsia, which is the failure of the stomach and other parts of the digestive apparatus to convert the food into perfect, that is, health-giving blood; for if the blood is imperfect in quality, the nervous influence which is made out of that blood must also be imperfect, not of a suitable character, hence does not manifest itself naturally, fails to effect the objects intended by nature. When a man is dyspeptic, that portion of the nervous fluid which is sent to the brain is not of a proper quality; and whatever part of the brain is in the habit of greater exercise, is more particularly disturbed, because more of the imperfect blood, or more of the imperfect nervous fluid is sent there. Suppose the moral organs, at the top of the head, are most constantly exercised, as in the case of a clergyman, his teachings will diverge from the right line, will be unfaithfully lax, or morbidly rigid, painfully exact, unsympathizing, vituperative, dealing in epithets and invectives, with not a tithe of the forbearances which characterized the Master. If he be more of a theorizer, more purely intellectual or imaginative, his discourses will tend to what is airy, impractical, and absurd. If he be "domestic," a great lover of his wife and children, devoted to their welfare, the effect of bad blood on this part of the brain is to revolutionize this sentiment, and he becomes insufferably cross, complaining of the very things done for his comfort and welfare, overrunning with a multitude of utterly groundless suspicions, imagining slights and inattentions where they were never intended,

and perverting every thing said and done. If such a person, or exceedingly affectionate parent, or other relative, becomes actually deranged, the life of the child is sought, or of the kindred most loved. It is thus that mothers are not unfrequently known to murder their own children, the infants of their bosom.

If a man loves to eat over-much, the imperfect, the bad blood excites the stomach to inordinate appetites. The man is never satisfied; he is always eating, always hungry, can not wait for his meals with any kind of comfort or patience—hence eats whenever he is hungry, giving the stomach no time for rest; thus it is over-worked and the main difficulty is increased.

It is precisely so with the great propensity of our nature. The nervous energies are sent out through proper or improper indulgences; the imperfect blood of dyspepsia, or bad blood from whatever cause, goes to the parts in excess, and has one of two effects: it affords no nourishment, or excessive; desire dies, or is morbidly great. The first step is rest; the second, to supply a pure blood, which is best done in improving the general health by perfect cleanliness, regular daily bodily habits, regular eating thrice a day, feet always dry and warm, sleeping in a cool, well-ventilated apartment, sleeping only seven hours, being in bed only seven hours of the twenty-four, and that all at the same time—seven consecutive hours spent in sleep, so as to insure its soundness In addition to these, and without which the others can not be expected to be efficient, the nervous influences must be sent out of the body through another set of channels; must be expended in physical exercises, steady, hard, remunerative work, calling into requisition, the while, all that force of will which can

possibly be brought to bear in compelling the mind into a different channel.

The proof of the truthfulness of the principle presented may be easily demonstrated in any half-hour. Move the arm up and down continuously, until motion becomes painful or impossible; then running can be done as vigorously as if the arm had not been moved so. After running for some time, and resting the arm, it recovers its entire strength. It is precisely so with every other muscle or set of muscles in the system, its glands or manufactories. A man may think until the brain seems scarcely to work at all, yet he can go out and work as hard as before he began to think, and after a while can go to his study and think to advantage again.

To administer medicines to stimulate any power into wonted activity, is only the stimulus of the lash to an exhausted donkey; it either kills outright, or induces an unnatural effort, which can only be exerted temporarily, with the certain effect of falling into greater exhaustions. Precisely so is it with the tonics and other remedies more powerful and more destructive, when employed to "invigorate." As proof, the universal testimony is, "It seemed to do good for a while." The recognition of this simple truth would prevent the blasting of many a fond hope, would save many a dollar to those who can ill afford its expenditure, would prevent the robbery of many a till, would save his integrity to many a (heretofore) noble-minded youth. Ignorance of that principle has allowed multitudes to precipitate themselves into wrong-doing, and into vices which have ultimated in ruin to body, soul, and estate.

FALSITIES.

Designing persons have perverted facts, with a view to impose on the young and inexperienced, thus: The instantaneousness of the acme of propensity is given as proof of an unfortunate debility. But keenness of appetite after long fasting, is no proof that there is no ability to enjoy food, no proof of debility of the digestive apparatus. The colt kept long in the stable, bounds away like a deer as soon as the door is opened. All the appetites of our nature are keen after long disuse, or if infrequently gratified. The very keenness of enjoyment of a favorite dish, is the strongest proof possible of the power to enjoy, and of the healthfulness of the parts involved. The absence of the capability of enjoyment is the proof of diseased conditions. As to every taste, appetite, and propensity of our nature, the three great rules are, Temperance, Rest, Diversion. In this connection a "Society" has been in operation for a number of years. One of its late announcements is of "new remedies" of vaunted powers—the strongest acknowledgment of the inefficiency of the old. This alone is most suggestive to the reflecting. That self-called "Society" of one, if possessed of any intelligence, would naturally employ all the means suggested by the medical literature and experience of the world, and the bare notice that it had "new remedies" was simply a confession that up to A.D. 1862, there was no cure of the nervous affections to be found in any medicine known to that date. It is then clearly the dictate of common-sense, that if those *really* afflicted can find no relief in the judicious and persistent attention to the suggestions above of rest, temperance, and diversion, the next resort should be to a known physician of intelligence, experience, and honorable standing, simply because he has direct

and immediate access to all the medical discoveries of the civilized world; hence no stranger, or charlatan, or pretender can possibly be ahead of them, can possibly know any thing which they do not know.

"LOSSES," ETC.

As to those "losses" which result from early habits learned from evil associations, one impression is here sought to be made on every reader, that no medicine known can by any possibility repress or "stop" them permanently, except such as endanger the power of the system and life itself. Repressing a thing of this kind is no more a "cure" than it is a cure to drive in measles, nettle-rash, tetter and the like. The most uninformed know that the striking-in of measles and such ailments can never be done with impunity, that life is always endangered thereby. So with the monthlies, and so with the subject in question. Nature will find a vent or make one in some way, as to the unmarried, once or twice a month or even thrice; if these bounds are not exceeded, it is not unhealthful. In proportion as they are exceeded, there is debility, nervousness, etc., as named in previous pages. To give some idea of the power it requires to repress, the remedies ordinarily employed are not only poisons, but those of the most virulent character, a grain or two of which cause immediate and certain death, such as strychnine, gelsemin, ignatia mara, nux vomica, etc., but in order not to excite apprehension, less formidable names are appended to the prescriptions. If this is not sufficient to deter from medicinal remedies, or any remedies from any one except the family physician, it may be enough to append a letter received April 5th, 1862, one of a class innumerable received by city practitioners: "These habits were contracted

at an early age; they left distressing consequences. I took various medicines, and after exhausting all my means I am a confirmed invalid, and my physician tells me there is no help for me, that I can not get well."

These habits acquire such a sway over the young sometimes, that at the early age of twelve the subjects of them are as powerless of resistance as is the most inveterate drinker or opium-eater at the age of fifty years. Within a few months standard medical journals report two cases in California of eleven and twelve years, where only a terrible surgical operation could (but did) break up the habit, and save from clearly approaching idiocy.

The *American Journal of Medical Science* reports a case of a child not twelve years old, "of a gentle and engaging disposition, and endowed with a considerable degree of intelligence, so powerfully influenced by the fatal passion which dominated, while it undermined its existence; this child at length became an object of horror to the parents and the friends, and soon after died with all the symptoms of brain disease," and which, on further examination, was found to have extended to the whole spinal column, involving the spinal marrow; the cerebro-spinal fluid having become "yellow matter" instead of a clear transparent fluid, as it is in health. It is not, therefore, by any means strange that in a case known to the author, a manly youth, born to a fortune, in one of the loveliest and happiest families of brothers and sisters in the land, has been for several years the inmate of a lunatic asylum, hopelessly idiotic, never speaking a word. As such results are not infrequent, and any family is liable to the misfortune in some of its members, it is considered proper, wise, and humane to press the subject on the attention of the judicious and the reflecting. It is

particularly desirable to disabuse the mind of a prevalent impression, that the physical "losses" necessarily involve moral guilt, or are the result solely of improper practices, for they will always occur more or less to the most virtuous and to the married, if from home a short time. Nature will force an outlet to accumulations when the channels of her own appointment are in any way closed. But she must have the coöperation of temperance, cleanliness, industry, and force of will, moral and intellectual; a force of will worthy of a man, in order to keep her in healthful bounds; these are safe and efficient: medicinal means are always uncertain, inefficient, unsafe, or dangerous.

The practical view to be taken of nervous affections in general, is, that they are an effect; and whether it be called neuralgia, nervous debility, nervous prostration, or any other name, and in whatever part of the body it is located, the immediate cause is in the condition of the blood, for it is upon the blood the nerves feed, it is by the blood they are nourished, and from it they derive all their power. If the blood is not supplied in sufficient quantity, inanition is the result, a general prostration; if the blood is too rich, there is abnormal action; if the blood is impure or imperfect, there is nervous irritability; the mind is fretful, peevish, unstable, the body is weak, restless, and invigorous; if the blood is over-abundant, there are aches and pains, neuralgias, which are literally "nerve-aches," in any and every part of the system. There is beside these, a nervous debility, which arises from the part being exercised beyond the strength given by the natural amount of healthful blood sent to it, and that part becomes exhausted temporarily; if rested, it returns to its natural condition; if called into excessive action soon again, rest will enable it to regain its

usual strength; but that rest must be longer, each succeeding exhaustion requiring more time for recuperation, until, eventually, the power of recuperation is lost. This is destructive excess, not only to the part itself, but to the whole system, because the malady spreads as naturally and as certainly as the fire in a burning building, and ceases not until the ruin is complete. If the brain is exercised too intensely, whether in perplexing study, in incessant anxieties, or in the vortex of business, it soon begins at length to lose its elasticity, its power of concentration, its continuity of thought, and the mind goes out in darkness, the body in death, or both body and mind together wilt and wither away. But even this condition of things is found in an unnatural state of the blood, brought about by the brain consuming more than its share of the nervous supplies; hence the stomach and other portions of the digestive apparatus have less than their share, perform their duties imperfectly, and make an imperfect blood, bringing us again to the point arrived at before, to wit, that in the cure of all nervous difficulties, rest to the parts is the first essential; the absolutely indispensable step; the next is to supply the parts with a better quality of blood, a blood which is perfect, pure, and abundant. Nothing can purify the blood without pure air; nothing can make it perfect and life-giving but muscular exercise, sufficient, yet not excessive, not exhausting, the whole expressed in three words, "MODERATE OUT-DOOR ACTIVITIES," always safe, always permanently efficient, and will always cure, if cure is possible, when conjoined with all the sleep the system will take at night in large, well-ventilated chambers, having a constant supply of pure out-door air steadily introduced.

As to the debilitating which take place in the latter hours of a night's sleep, even the married sometimes complain, not only of the debility, but of various other things, as pain in the back, listlessness, want of concentration of mind, bad memory, despondency, and easily tired; but none of these are necessarily the symptoms of what they have been led to believe by reading mischievous and demoralizing books. In nine cases out of ten, these symptoms have no real existence; they are the creations of a morbid sensibility. The best cure for this state of things is to exercise manly courage and resolution enough to drive them away from the mind, by engaging in some active, invigorating, useful, and profitable business; one which will allow no time for useless and idle moping about.

The early morning debilitations are certainly a reality, but if not connected with present vicious habits, and they do not occur half a dozen times a month, they can not have any specially disturbing ill effect of long continuance. But these debilitations do occur to the virtuously married, and all ought to know it, without any moral guilt, but from one of two directly opposite causes—too frequent or two infrequent marital indulgences; the mean, proper to each individual, must, like sleep, be ascertained by an intelligent observation. All rules in this regard would be as ridiculously absurd as those which prescribe how much each man should eat, or work, or sleep; each constitution, each system should have the amount proper to it, and any excess or deficiency will always and inevitably result in decided and permanent harm to the whole body, if persisted in. The only possible method of determining wisely, safely, and certainly what each requires, is the exercise of an intelligent observation on effects from a greater or lesser number. Generally, if healthy,

grown persons sleep less than seven hours in twenty-four, they are apt to be "dull" during the day; if they sleep nine or ten hours out of the twenty-four, they are also "dull," because, in attempting to get so much sleep, to force on nature more than she requires, the whole amount of sleep is imperfect; the faculties are imperfectly nourished and recreated, hence are "dull" also. Precisely so in the case in hand; the "debilitations" follow an excess or a deficit. Begin with a weekly restraint of fifty per cent, and if these debilitations diminish in frequency within a month, then excess has been the cause; and *vice versa*. Let the married so regulate the matter, that there shall be no debilitations from one year's end to another. The whole subject is a delicate one, and the reader's sympathy is claimed in the contemplation of the difficulty of the endeavor to convey most important practical information, needed in every family, and at the same time to avoid pandering to depravity. The city practitioner is often consulted by persons laboring under distressing apprehensions of indefinite calamities, from that prolific source of ills, pernicious reading, as found in books which they would not care to have it known they possessed. A lightish-colored, glairy substance, resembling somewhat the white of an egg in appearance, consistency, and color, is observed to follow a passage from the bowels or urination, sometimes leaving a stain. This is uniformly represented in the publications referred to as a most momentous affair, a symptom which threatens enormous ills; and being a symptom of no special importance, easily rectified, if necessary in a few days, by trifling remedies, it serves at once as a foundation for exorbitant charges, and the gaining of considerable credit for the skill and ability of the charlatan engaged in the nefarious deceptions. There are not three cases in a

thousand where these things are any more than a running at the nose on the taking of a cold, a simple inflammation of the mucous membrane of the parts, not worth while doing any thing for, unless for the mere purpose of allaying the groundless apprehensions of the nervous, as they might exist for a lifetime without any appreciable ill result; and, nine times out of ten, will cure themselves at a proper period, if simply let alone. Standard medical writers, known the world over, write in this view of the subject, and their testimony is so positive, their reasonings so conclusive, their observations so numerously corroborated, that it is not necessary to make any quotations or to cite any authority. In conclusion, in reference to this whole class of subjects, the never-failing remedies are temperance, a high moral sense, a manly force of will, and a life of steady, active, useful, and absorbing industry.

As men begin to be about fifty years old, especially if of sedentary habits, the feeling on rising in the morning is as if they had not gotten enough sleep, not as much as they used to have, and as if they would like to have more, but they can not get it. They look upon a healthy child sleeping soundly with a feeling of envy. But it is curious to observe that there is a bliss to all in the act of going to sleep, a bliss we become cognizant of only when we happen to be aroused just as we are falling into sound sleep; and there are strong physiological reasons to suppose that this state is a counterpart of that great event which is to come upon all, the act of dying. In fact, those who have in rare cases been brought back to life when on its extremest verge, and in several cases as to those who have been recovered from drowning and other modes of strangulation, or simple smothering, called "asphyxia" by physicians, the expressions have been, on coming to con-

sciousness: "How delicious!" "Why did you not let me go?" An eminent name, thus brought back, represented that the last-remembered sensations of which he was conscious were as if he were listening to the most ravishing strains of music. Let us all then cherish the thought that our approach to the sleep of the grave is the strict counterpart of the approach to sleep, of which some nameless writer has beautifully said: "It is a delicious moment; the feeling that we are safe, that we shall drop gently to sleep. The good is to come, not past. The limbs have been just tired enough to render the remaining in one position delightful, and the labor of the day is done. A gentle failure of the perceptions comes slowly creeping over us; the spirit of consciousness disengages itself more and more, with slow and hushing degrees, like a fond mother detaching her hand from that of her sleeping child; the mind seems to have a balmy lid closing over it, like the eye, closing, more closed, closed altogether! and the mysterious spirit of sleep has gone to take its airy rounds." May such be the physical "bliss of dying" to you and to me, reader, with the spiritual added, ten thousand times more ineffable.

THE YOUNG SUICIDE.

RECENTLY, a young collegian of twenty, who had the love and respect of his teacher and his classmates, for his diligence in his studies, his high classical position, and his generous nature, was found in his bed-room dead, the arteries of his arm having been severed, and his throat cut from ear to ear; an empty vial was found on the floor, labeled "Poison." A note on the stand read thus:

"Forgive me, my dearest parents, for this dreadful deed, but I am unworthy and unfit to live. May God forgive me! Farewell."

There are scores of such deaths every year, and the inquiry arises in every thoughtful mind: "What could have been the reason for such a terrible act?" This youth was the only child of rich parents; and the uninitiated vainly look around for an adequate motive for a deed so dreadful. A physician, especially a city physician, and more particularly the editor of a journal, treating of health and disease, is at no loss to unravel the mystery. The key to the sad history is found in the three facts, the victim was a man—young, unmarried. Medical editors and physicians are constantly receiving letters like the following: "Can you save me from an ignominious grave? O God! that some one would give a cure for those unfortunates who have been so foolish. Will you, in God's name, give a cure in your next issue? and you will have the prayers of thousands." A day or two later came the following: "Dear Sir: In the midst of despair, I earnestly address you, thinking that perhaps my sorrow may by your skill be turned into joy. I have by indulgence ruined myself. I have applied to many without permanent benefit; hence the cause of despair. Now I feel the consequence of my crime to a very great extent men-

tally, in consequence of which I have been obliged to give up all employment and do nothing, and of late I am totally unfit for any thing. I have now before me a copy of your JOURNAL OF HEALTH, volume nine, for October, 1862. Hence I address you, hoping you may be able to suggest some means for regaining health and happiness. I feel as if I would surely die, if I do not obtain some active and immediate remedy." While supervising these lines for the press, a letter is received from a young gentleman of high position, untarnished reputation, and of high moral worth, active, energetic, and faithful in all the offices of trust in which he has been placed, and which he has never failed to fill with honor to himself, and credit to his friends. Such an one writes: "I am satisfied that hell is my portion in robbing Nature and robbing God, my Creator. My mind is giving way to despair. I am ashamed of myself before my fellow-men and before God. And if I am dealt with according to my deserts, I am doomed." The practical question, and one which very nearly concerns every parent who has an unmarried son over fifteen years of age, is, What can produce such states of mind? They arise in all cases from a vicious reading; from perusing books which are sent gratis and post-paid by cart-loads, to all parts of the country every year, through the agency of the newspapers, with advertisements headed in this wise—taking a city daily, at this present writing—and which are copied, for large "consideration," by the country press, (nor are all of our religious papers guiltless of this damning iniquity:) "To the Unmarried," "Marriage Guide," "Physiology," "The Benevolent Association," "Physiological Inquiries," "Young Man's Book," "Warning to Young Men," "Manhood," "Physical Debility," with a variety of other headings. These publications have the same aim, object,

and end, and the midnight depravity which indites them stands out in every page. It is not necessary here to enter into minute details, but to make use of the general facts. The programme marked out by all of them is essentially the same. First, to pander to the vitiated curiosity of boys and youth, not only by the "pictorial illustrations drawn from life," but by speciousness of argument and reasoning and statements, to mislead the mind, inflame the imagination, corrupt the heart, and eventually degrade the whole character. It is an often remarked fact, that among the young gentlemen who attend a first course of medical lectures, there are a large number who imagine themselves the victims of each successive disease, as it is presented in course by the lecturer. And any person not versed in medicine can scarcely read any book on any disease, without beginning to imagine that he has more or less of its symptoms. In fact, medical biography abounds with notices of the deaths of men from the very diseases, the successful treatment of which made them famous; leaving us to suppose that imagination has something to do in causing, or at least in aggravating, some human maladies. It is not surprising then, that youths in their teens, or just entering manhood, in reading a treatise strongly depicting the ultimate effects of certain symptoms, alleged to be connected with certain conditions of the system, should run riot in their fears, and throw themselves helplessly into the hands of those who seem to know so much on the subject, and by their own accounts have had such remarkable success in their line. In every one of these books, without exception, certain symptoms are mentioned (not peculiar to any one disease, but common to a number, or which may exist, and if let alone, would in time disappear of themselves) as peculiar to a state of the system indicative of "a want of capabilities."

Among these the most stereotyped are, dimness of vision, loss of memory, incapability of mental concentration, no steadiness of purpose, depression of spirits, etc. Then certain physical appearances are noted as corroborative of the existence of the malady in question. The youth, not having opportunities of comparing himself with others; not knowing that a good many of these very appearances are natural, or are not incompatible with perfect health, becomes alarmed, and in his fright appeals to the author of the book he has been reading, to save him by all means from the impending ruin and disgrace. A fee is extorted, which is up to the utmost ability of the victim to raise. Remedies are used. They do not change the condition of things; simply because the conditions are in many cases not unnatural; but the patient is made to believe that it is because the case is more desperate than was imagined, and that more powerful and more expensive remedies must be used. These are alike unavailing; meanwhile, weeks and months pass away; the victim has spent all the money he can "rake and scrape," "beg, borrow, or steal" literally, and then writes to some known physician in the strain of the letters already quoted, to make at least one more attempt at rescue; or if he does not this, he settles down in the despair which leads to suicide.

But there is sometimes a more dreadful ending so far as mental and bodily sufferings are concerned; we say more dreadful with design; for it is more so in proportion as it is more of a calamity to die on the rack than by a cannon-ball. When the sharper has obtained all the money possible from its victim, and wishes to get rid of him, he says in plain language:

"There is no help for you but in marriage." But often this is an impossible remedy, and even if it were practicable, the patient has such a view of his

condition, that he would consider it dishonorable and even infamous to impose himself upon a confiding woman. The sharper is prepared for this, and with practiced depravity, advises an illegal connection, not only as a test of capabilities, but as a remedy for certain symptoms observed to occur in the early morning, or at the close of certain natural actions. Human nature can seldom withstand the motives presented in cases like these. Six months ago a gentleman applied for advice under the following circumstances. He had been led, by reading a book on "physiology," to believe that in connection with certain practices a deplorable state of things was induced. He placed himself under the care of the writer of the book in question, and in two or three years had expended a considerable amount of money, without adequate results. He was then told that he must form a criminal *liaison*, which he did with inconceivable loathing, and which he maintained until he found himself the victim of a degrading disease, showing itself on the face and hands. To escape the inquiries of relatives and friends, he left home and came to us, the embodiment of despair, the mind hopeless, the body ruined, the constitution a wreck. This disease the writer has never treated in a single case; and it is always turned over to other hands, the usual advice being, when there is any hope of restoration, to have recourse to the family physician at home, who would be more likely than any other to take a deep interest in the case, and exercise those sympathies which are so requisite under the circumstances.

Cases of this kind are of daily occurrence, and are constantly coming under the notice of city physicians, by hundreds and thousands every year. Some practical lessons of an importance which can not perhaps be over-estimated, may be drawn from this subject:

1. Allow no paper or magazine to enter your house which offers, by advertisement, to send any book on health and disease free of cost. No man can afford to print a book for nothing, and then to pay postage on it, unless he afterward finds his pay in the manner above described.

2. Let all parents encourage the early marriage of their sons; as soon after twenty-one as circumstances will permit; it is a less evil than to be exposed to the dangers above referred to, by putting it off to the more physiologically appropriate age of twenty-five.

3. Let no youth of intelligence ever consult a man at a distance, for the ailments which have been alluded to, or the supposed symptoms of impossible things. It is a thousand times better to consult the family physician at home; him you can trust with safety, as to body and reputation; a thing which is never to be done by men who send books free of charge, which treat of any form of disease.

As to the symptoms and debilitations of the early morning, and which have such a depressing influence on mind and body, second only to those of dyspepsia, nothing can be more certain than that there is no remedy safe and certain in drugs; but it must be sought in the diligent following out of some active industrial pursuit, force of will, and the cultivation of a high and manly moral power, which looks with angry and impatient contempt on all that is vicious, corrupting, and degrading, whether in deed or word or thought; this is the only efficient, the only infallible remedy, and is worthy of the mature reflection of every high-minded and generous-hearted youth.

CONTROLLING POPULATION.

WHETHER it is right for individuals to use means in lawful wedlock to avoid having children, is a question which each must decide for himself. That procreation is connected with the strongest passion of our nature, seems to indicate the fact, that the continuance of the race was intended to be in a measure compulsory; it would then follow that any effort to thwart the purposes of Providence, would be essentially criminal, as the narration in the thirty-eighth chapter of Genesis clearly proves. It has been said of a Roman Emperor, that his love of eating was such, he had been known to cause vomiting after a hearty dinner, in order that he might soon again repeat the pleasure of having another magnificent repast. The reader can but turn with disgust at such a degradation, at this or *any other* perversion or *protraction*, of the natural gratifications. Attention is called to the question of morals above stated in order to give

A WARNING,

as to the various means used. It is perfectly certain that there is only one safe and infallible preventive, and that is abstinence; but that very abstinence is the exhibition of a selfishness as intense as it is debasing, in proportion as one party suffers an inconvenience more trying and annoying than the other. No person in honorable wedlock has a right to restrain the other from the reasonable exercise of the gratifications of our nature, on any ground, whether of danger or suffering, or of simple inconvenience. Cases are constantly coming before the city physician, where the restricted party, endures, out of a generous nature and a warm affection; but the greater the discredit and the deeper the contempt is due to the party which imposes on that pure affection

and that high generosity. If repudiation is not justifiable by the New Testament code in cases like these, a thousand times ten thousand proofs can be given every year of the world, that these restrictions on one party for the mere whim or fancy or convenience of the other, have introduced lifelong discords and dislikes in families which were aforetime happy, contented, and respectable; while in other cases, persons not under the control of high moral obligation, or with perverted views on this subject, have been driven to illicit connections; and having once broken down the holiest of domestic barriers the way has opened for the easy incoming of a brood of evils which it is sorrowful to contemplate; for when conjugal fidelity has been sacrificed, the worst passions and practices of our nature make an easy conquest of the victim.

"WITHDRAWAL."

This is the term now used which as a means of avoiding the responsibilities of large families, is becoming very common of late years; and the effects of such practices are beginning more and more frequently to attract the attention of city practitioners, especially to a new combination of ailments which are as distressing as they are dangerous; and if the readers of these pages could be made fully to understand what these pains and penalties are, it is very certain that few of them would have the courage to risk them; these are eventually (sometimes appearing in a very few weeks after the commencement of the practices) no perfect enjoyments; with intense pains always following; a gradual weakening of the whole system; tormenting pains in the loins; pains or soreness when sitting down, inducing a constant change of posture; and when it is considered that a very large portion of the waking existence of many

is spent in a sitting position, he must be a brave man who will risk bringing on himself a painfulness which knows not an instant's cessation as long as he is not in a recumbent position, or on his feet. The very clothing near the parts implicated, although abundantly roomy, causes an uncomfortable feeling of pressure or restraint; the calls of nature are attended with a feeling of anxiety, apprehension and imperfection; and all the while there is a mental disturbance, a painful apprehension of future ills, and a depression of spirits; a want of physical, mental and moral courage, which altogether make life a pain instead of a pleasure; a burden instead of bliss.

The great practical inference is, that all should "use" the pleasures and gratifications of our animal nature, "as not abusing them;" using them in their natural way and order, regularly, temperately; remembering that we are above the brutes which perish, and are but a little lower than the angels; the very thought of which should be constantly cherished, so that the contemplation of such a glorious truth should elevate and ennoble us; raising us higher and higher above the world and its baser pleasures, and constantly bringing us nearer and nearer to that exalted state which the Beneficent Creator has destined his faithful ones to occupy.

NOTE TO P. 79.

THE LAWRENCE MODEL LODGING-HOUSE.—This institution, which was founded by the late Mr. Abbott Lawrence, is now completed and fully tenanted. It is situated not far from the Boston Common, and is five stories high. The structure is of brick, with granite and free-stone trimmings. There are four tenements on each floor, with a like number of rooms, and all the necessary closets attached to each. They are divided each from the other by a brick wall, and entered from an entry-way built of the same material. Every convenience is afforded for the health and comfort of the occupants. The tenants are chiefly clerks, mechanics, railroad employees, whose incomes vary from $450 to $1000 per annum. Their tenements cost them from $2.50 to $3.25 per week, according to the location. The rent is paid in advance. The entire cost of the land and building is estimated at $30,000, and the income nets about six per cent per annum.

NOTE TO P. 215.

Four children, belonging to a laboring man residing at Limehouse, have been poisoned by arsenical paper-hangings in the room where they slept and played. The children sickened and died in rapid succession, and it was supposed by the medical man who attended them that the fatal disease was diphtheria. The great mortality, however, caused uneasiness in the neighborhood, and an inspection of the house was directed. It then appeared that, although the house was clean, well-drained and ventilated, the room occupied by the children was a deadly place, it being hung with green paper. This the children had torn off in some places to make toys with, and in the course of their play had been in the habit of sucking the green color off. The paper was saturated with arsenic.—*London paper for July*, 1862.

A lady, residing in Boston, was fast going into a decline, on account of sleeping in a room in which there were highly-colored green paper-hangings on the walls. The doctor found out the cause, the room was stripped of the hangings, and the lady at once began to improve. —*August*, 1862.

NOTE TO P. 232.

POISON-FLOWERS.—Some time since, attention was called to the poisonous coloring-matter of certain flowers worn in ladies' head-dresses. The subject has attracted general notice lately, and the Hon. Mrs. Cowper has acted on behalf of the Ladies' Sanitary Association. An analysis of some of these flowers has been made By Prof. Hoffman. Here is a passage from his report: "In a dozen of the leaves sent me, analysis has pointed out on an average the presence of ten grains of white arsenic. I learn from some lady friends that a ball-wreath usually contains about fifty of these leaves. Thus a lady wears in her hair more than forty grains of white arsenic—a quantity which, if taken in appropriate doses, would be sufficient to

poison twenty persons. This is no exaggeration, for the leaves sent to me were—some of them, at least—only partly colored, others only variegated. In consequence of some inquiries, I have been led lately to pay more than usual attention to the head-dresses of ladies, and I observe that the green leaves are often much larger and more deeply colored than those which I have received." Is a word of comment or caution necessary after this? Surely not. Here is the remedy for such an abuse. Dr. Hoffman says: "Ladies can not, I think, have the remotest idea of the presence of arsenic in their ornaments. If aware of their true nature, they would be satisfied with less brilliant colors, and reject, I have no doubt, these showy green articles, which have not even the merit of being, as far as coloring is concerned, a truthful imitation of nature. There being no longer a demand for them, the manufacture of poisonous wreaths and poisonous dresses would rapidly cease, as a matter of course."

NOTE TO P. 260.

Light, says the *Builder*, an English paper, well diffused over all parts of a dwelling, is essential to its being healthy. A dark house is not only gloomy and despairing, but is always unhealthy. We know, on high medical authority, that "the amount of diseases in light rooms, as compared with dark ones, is vastly less." Light ought to be diffused over the whole dwelling, so that no dark corners be left to invite a deposit of that which is untidy or offensive. Happily, the motive which in times past led so much to an exclusion of the light of heaven no longer exists. And though ages may pass ere the evils resulting from a vicious legislation are entirely swept away, yet the removal of the tax on windows, and of that on glass, must, amid much to discourage those who have long and zealously labored in the cause of sanitary amelioration, be regarded as most valuable concessions in its favor. The same paper remarks: Wood of an inferior quality, or unseasoned, when used in any part of a dwelling-house, is a false economy; whilst the cracks and shrinkages caused thereby are often prejudicial to health.

NOTES TO P. 314 AND 24.

Living in Scotland in 1862.—The late census of Scotland shows that 7964 families—more than one per cent of all the 666,786 families of Scotland—were found living in single rooms which had no windows; 226,723 families were found living in one room, each with one or more windows, but often a mere apology for a window. Thirty-five per cent of all the families in Scotland—more than one third—are living in one room. A still larger number, thirty-seven per cent—nearly a quarter of a million of families—live in only two rooms, leaving only twenty-eight per cent living in houses with three or more rooms. This would have seemed incredible, if it had not been ascertained on actual inquiry. Glasgow is the greatest city in Scotland. How is its population housed? Only one family in four in all

that vast city have as many as three rooms to live in; 4024 families, with five persons in each family, have only one room to live in; 2450 families, with six persons in a family; 1256 families, with seven persons in a family.

There is one house to every six persons in the country. In New-York city there are thirteen persons to a dwelling, on the average. In Boston, about nine; in New-Orleans, nearly seven; in Philadelphia, seven, in 1862.

Persons wakened up just as they are falling asleep, are sometimes not able to go to sleep again for hours, and the greater their efforts to do so, the less are they able to fall asleep again. In such cases, it is best to get up at once, wash the face and hands, and walk briskly about the room for ten or fifteen minutes, or engage in reading or writing for the same length of time. And as sound sleep is a favorable omen in dangerous sickness, and mitigates suffering in all, the utmost care should always be taken to avoid breaking in upon the sleep of the sick when they are just falling into a doze; and for the same reason, a sick patient should never be waked up to take medicine, or for any other purpose, unless by the express orders of the physician, or for some clear necessity.

At other times, the sick, and also the well, may be accidentally waked up at a late hour in the night, and getting to thinking, may not be able to go to sleep again for an hour or more. The result is, they sleep that much later in the day. The same thing is apt to occur the next night, and the next, and is a clear loss of time. It can be broken up promptly, either by retiring two or three hours later, or by being waked up two or three hours earlier, and avoid sleeping a moment in the day-time. In this way, the time for the usual waking will be slept through, and the privation of a bad habit will be entirely broken up the first night, and the person, thereafter, will sleep the night clear through. The inability to go to sleep, which annoys those who are well, can in every case perhaps be avoided, by avoiding sleep in the day-time, by exercising in the open air two or three hours more each day, or by curtailing the time of being in bed, which ought not to exceed eight hours for grown persons in health.

INDEX TO SLEEP.

PAGE

Air Deadly,..... 11
" Breathing Bad,..... 35
" Stint of,..... 51
" Crowded Rooms,..... 57
" Taints,..... 91
" Noxious,..... 183
" Bath,..... 185
" Country,..... 219
" Pure and Impure,..... 225
" of Close Rooms,..... 247
" of Chambers,..... 255
" and Thought,..... 274
Abodes of the Poor,..... 74
Appetites Compared,..... 117
Avoiding Temptation,..... 125
Alcoholic Drinks,..... 179
Andrews & Dixon's Grate,..... 305

Black-Hole of Calcutta,..... 9, 41, 99
Bodily Emanations,..... 69, 72
Bad Habits,..... 145
Burying under Churches,..... 243
Breath of Life,..... 277
Black Blood,..... 287

Crowding, Effects of,.....20, 23, 73, 87, 97, 249, 312
Canary Bird,..... 26
Convulsions of Children, ... 25
Capacity of Lungs,..... 27

PAGE

Charcoal Fumes,..... 37, 95
Chambers Vitiated,..... 55, 183
Consumption and Dust,..... 63
" and Close Rooms,..... 282
Children's Fits,..... 25
" Sleeping Together,..... 147
Cottage and Hovel,..... 88
Country Air,..... 219, 268
Chemical Affinities,..... 291

Deadly Emanations,..... 15
Dust,..... 32, 59, 61, 63
Debilitations,..... 141
Doko Race,..... 207
Dark Parlors,..... 262, 297

Emanations,..... 15, 69, 93
Electrical Influences,..... 108
Eating,..... 166
Excessive Child-Bearing,..... 280

Franklin's Air-Bath,..... 185
Force of Will,..... 197
Fire on the Hearth,..... 303
Furnaces, Andrews and Dixon's,..... 303

Grotto del Cane,..... 17
Griscom's Ventilation,..... 205
Gas Burning,..... 239, 270

Howard, John,..... 44
Human Effluvia,..... 69, 71
Hovels and Cottages,..... 88
Health Invigorated,..... 163
Heart-Burn,..... 167
Hamilton's House-Plan,..... 199

PAGE
Houses—Warming,..... 229, 307
" Baker's Plan,..... 309
Infant Convulsions,..... 25
" Mortality,..... 51
" Sleeping,..... 133
" Feeding,..... 137
Inherited Infirmities,..... 65
Instinct and Reason,..... 113
Important Considerations,..... 128
Infection,..... 159
Invisible Impurities,..... 258
In-Door Life,..... 267

Kitchen Ventilation,..... 233

Lungs Capacity,..... 27
" Office of,..... 39
" Described,..... 286
Londonderry Steamer,..... 97
Light is Curative,..... 260
Life and Blood,..... 279
Low-Down Grate,..... 301

Moderation,..... 112
Marriage a Safeguard,..... 295

National Hotel Disease,..... 13, 49
Nursing at Night,..... 135

Out-Door Life,..... 266

Pontine Marches,..... 16
Pure Chambers,..... 19
Prison Horrors,..... 43
Physiology, Books on,..... 149
Papered Rooms,..... 215
Pernicious Instruments,..... 161

PAGE

Plans for Houses,..... 199
Poisonous Rooms,..... 295

Roominess and Health,..... 67
Reason and Instinct,..... 113
Ruined Youth,..... 143

Second Naps..... 193
Simoons,..... 31, 33
Sunlight a Ventilator,..... 269
Sun for Children,..... 264
Sleeping Together,..... 180
" with the Old,..... 5, 210
" with Consumptives,..... 109
" Different Temperaments,..... 138
" Children,..... 139
" Soundly,..... 111, 115
Sick-Chambers..... 292

Tenement Houses,..... 79
Thames Tunnel,..... 93
Town and Country,..... 268
The Proposition Proven,..... 314

Ventilation of Court Rooms,..... 46
" Randall's Island,..... 47
" Griscom's,..... 205
" Stables,..... 206
" Kitchens,..... 229
" Shops,..... 234
" Longevity and,..... 245
" School-Rooms,..... 249
" Chambers,..... 299
" Sick-Rooms,..... 300
Vitiated Rooms,..... 249

INDEX TO HEALTH AND DISEASE.

PAGE

Apoplexy, ... 39
"Alice," Our Little, ... 58
Anodynes, ... 65, 235
Anal Itching, ... 68
Appetite, ... 97, 115
Air-Passages, ... 155
Astringents, ... 238
Amateur Doctors, ... 255
Action in Emergencies, ... 256
Aches and Asthma, ... 73, 218, 258
Apples Loosening, ... 74, 272

Bowels, Regulation of, ... 25, 207, 237
Bodily Adaptabilities, ... 229
Bad Breath and Taste, ... 35, 36, 252
Bronchitis, ... 130, 158
Baths and Bathing 201
Bridge of Sighs, ... 225
Bleedings, ... 257
Burns, ... 261
Bread, Brown, ... 76, 263, 267
Binding Food, ... 272

PAGE
Constitutions Restored,..... 213
Cornaro, Lewis,..... 14
Combe, George and Andrew,..... 15
Costiveness,.....27, 33, 49, 61, 69, 77, 78, 87
Cleanliness,..... 37, 238
Children, Health of,.....53, 273
Cholera,.....50, 58, 93
Chilliness at Meals,..... 121
Cambric Tea,..... 122
Coffee,..... 124
Clothing, Change of,..... 135
Corns,..... 150
Colds,.....60, 154, 158, 165, 213, 228
Catarrh,.....158, 230
Cooling off slowly,..... 163
Chest, Development of,.....181, 185
Crying Curative,..... 217
Chronic Laryngitis,..... 230
Consumption,.....188, 230
Cough,..... 231
Clerical Rules,..... 247
Choosing a Physician,..... 249
Cracked-Wheat,.....76, 265
Corn-Bread,.....76, 267
Corn-Dodger,..... 269

Dyspepsia,.....109, 113
Drinking at Meals,..... 117
Decline,..... 230
Dress, How to,..... 245

PAGE
Exercise,.....81, 185, 193, 221, 248
Eating, ... 105
Eyes, ... 244
Epidemics, Conduct in,..... 247
Eruptions, ... 253
Emergencies, ... 257

Food,..... 7, 95, 103
Fistula,..... 63
Fruits, ...75, 132, 272, 280
Flannel, ... 137
Feet, Care of,..... 147
Franklin's Death,..... 161
Forresti, Professor, ... 224
First Things, ... 254
Fainting,..... 259

Gymnasium,..... 183

Health Regained, ... 15
Health lost, ... 19
Health, Essentials of, ... 23
Healthful Evacuations,..... 47
Horseback Exercise,..... 189
How to sleep well, ... 241
Hoe-Cake, ... 268
Hominy, ... 271
Health of Children..... 273

Instinct,.....9, 97, 115
Itchings, Anal,..... 68

PAGE

Injections, ... 83
Inverted Toe-Nails, ... 151
Inflammation of the Lungs, ... 159
Irritation, ... 232

Life's Great End, ... 11
Law and Lawyers, ... 22
Late Dinners, ... 111
Laughing, ... 218
Laziness and Fat, ... 220
Loosening Food, ... 272

Man and Beast, ... 41
Morbid Appetite, ... 115
Mystery of Life, ... 215
Mucous Membrane, ... 232

Nature resisted, ... 31
Nature's Cure, ... 223, 227, 233
Nature's Materia Medica, ... 239
Nasal Catarrh, ... 230
Neuralgia, ... 34, 258

Over-Fatigue, ... 191

Patent Medicines, ... 55
Physician, the Wise, ... 57, 249
Piles, ... 63
Pleurisy, ... 159
Pneumonia, ... 159
Public Speakers, ... 169

PAGE
Premature Disablement,..... 177
Pain,.....207, 258
Perspiration, ... 219
Poisoning, ... 259
Pone of Bread, ... 268

Recapitulation, ... 240
Rules for Singing, Speaking, etc., ... 215

Stooling, Mode of,..... 46
Summer Complaint,..... 59
Suppers omitted, ... 107, 288
Spring Diseases, ... 131
Seasonable Food,..... 133
Stockings, ... 144
Shoes, ...145, 147, 165
Spitting Blood,..... 159
Speaking easily,..... 179
Sleep,.....199, 241, 248
Spectacles, ... 243
Study, Best Time for,.....243, 248
Scalds, ... 261
Scours, ... 272

Taking Medicine, ... 79
Toasted Bread,..... 107
Tea,..... 124
Tonics, ... 127
Toe-Nails inverted, ... 151
Throat-Ail,..... 230

PAGE

Travelling, ... 247
Teeth, ... 250

Urination, ... 51, 218

Visiting Healthy, ... 99
Voice Organs, ... 157, 171
Virginia Corn-Bread, ... 269

Washington's Last Prayer, ... 228

Yeast, ... 264

INDEX TO CONSUMPTION.

	PAGE
Appetite of Nature	89
Arkansas Hunter,	117
Air and Exercise	172
Asthma	239
Alcohol Effects	245
Bad Colds	31,77
Bronchitis	47,50,239
Blood Purified	59,248
Bowels Regulated	162
Brandy Drinking	245
Braces	250
Consumption Described	5,51
" delusive	8
" not painless	10
" causes of	18
" localities	28,253
" liabilities	39
" its nature	46
" curable	77,202
" commencing	155
" seeds deposited	243
" communicable	155
Cough	12,80,93,248
Croup	47,49

	PAGE
Chronic Laryngitis	48
Cluster Doctrine	76
Canada Case	118
Cheesy Particles	157
Drains	170
Eruptions	44
Earliest Symptoms	81,90
Exercise	132,177,217
" various	182,244
Expectoration	156
Eating and Exercise	211
Eating, Rules for	184
Fatigue	87
Gregg's Case	117
Great Mistake	171
Hereditariness	29
Hectic	158
Health Rules	184
Horseback Exercise	244
Impure Air	43
Impure Blood	53,253
Inhalation	221
Lacing, Tight	21
Laryngitis	48
Localities	28,253
Liquors, not curative	245

PAGE

Medicated Inhalation..... 221

Norcom's Case..... 102
Night Sweats..... 159
Nitrate Silver..... 246
Newspaper Dereliction..... 253

Occupation in Consumption..... 38
Out-Door Activities..... 102,163
Over Exercise..... 175

Pulse..... 81,90
Porter Drinking..... 245

Respirator, the best..... 181

Symptom of Consumption..... 36,138
Spitting Blood..... 50,55,185,194
Short Breath..... 85,240
Spirometer..... 88,139
Summer Complaint..... 100
Sea Voyage..... 151
Sea Shore..... 100,153
Stokes Dr., Case..... 112
Spinal Disease..... 128
Self-Treatment..... 247
Self..... 170
Sydenham's Opinion..... 244
Southern Climate.....
Seed Sown..... 91

Tight Lacing..... 21
Throat Ail..... 47

PAGE
Tubercle..... 54
Tickling Cough..... 93
Tonics..... 160
Tonsils..... 157,167

Variety of Exercise..... 244

INDEX TO BRONCHITIS.

PAGE

Air and Health..... 78
Author's Opinion....142, 201, 249, 345
Asthma, Perpetual... 36
" Common 257
" Case of 315

Bronchitis, what is it? 6
" Symptoms 9
" how acquired 36
" Philosophy of 43
" Defined..... 44
" History of..... 53
Bad Habits of the Young.... 217, 299
Breathing, Remarks on..... 270
Brandy and Throat Disease 19, 186, 341
Baths and Bathing.....68, 229, 295
Boarding-School Education...298, 329
Boston Statistics of Consumption. 301

Consumption, what is it?..... 6
" Symptoms..... 10
" how acquired 35
" Philosophy of..... 46
" History..... 54
" Definition..... 61
" Communicability... 98
" Curability.....98, 322
" Threatened 203
" Real, Arrested 205
" Spurious 211
" Principles of Cure 65, 220, 242
" Early Indications .. 273
Contents of Lungs 78
" Heart 79
Congestion Described..... 43
Capillary Circulation 41
Cell Development..... 67
Chill and Fever..... 96, 111, 158
Climate..... 145
Cancer..... 269, 278
Clerical Health..... 254
Clerks 299
Croup 231
Children, Training of..... 333
" Precocious 326
" and Study..... 328
" Health of..... 324
Cough 90, 93, 201, 223
" how produced 306
Cod-liver Oil..... 241

PAGE

Clergymen, Chapter to..... 243
" how diseased 247
" Cases of, 14. 16. 20. 23. 33. 51, 154, 182, 240
Cities, Mortality of 335
Country, " 336

Dangerous Delays 36
" Exposures 29
Diarrhœa 97
Danger of Cutting Tonsils..... 309
Disease, Return of Prevented..17, 338
" Not by Medicine..... 318
Debilitating Indulgences.....218, 299
Death, Manner of 86
" Edward Irving 5
" Washington 227
" Whitfield..... 258
" Franklin..... 316
" Combe 125
" Maffitt..... 250

Editors, Suggestions to..... 138
Exposures, Dangerous..... 29
Expectoration 96
Edwards' Jonathan, Oratory 253

Fever and Ague, of..... 96, 318
Frail and Feeble Persons..... 126
" Children, Treatment of..... 334
Food, Tables of 284
" Amount Needed Daily..186, 289
Features, Hereditary..... 278
Female Boarding Schools.... 298, 329
Franklin's Death..... 316

Growth, Manner of..... 69

Heart, Contents of..... 79
" Disease and Death..... 248
How to Remain Cured..... 126
Home and Its Advantages..... 152
Health, a Talent 246
" a Duty..... 267
High Livers..... 267

Inflammation Described..... 43
Imprisonment, Long..... 77

Lawyers, Cases of.....19, 21, 162
Lungs Described..... 46

	PAGE
Lungs, contents of	78
Last Words	88
Lake-shore Situations	159
Life, Average Duration of	300
Mistaken Patients	171, 182, 190
Measures, Table of	290
Medical Science, Value of	298, 343
Merchants, Cases of, 16, 24, 156, 178, 207, 235, 240,	243
Mortality of Cities	335
Nitrate of Silver	237
New York City Mortality	336
Over Feeding	68
Oxygen, Effects of Breathing	71
Over-tasking the Brain	329
Object of the Book,	142, 302, 303, 339
Parallels	65
Principles of Cure	63, 65, 220, 225
Phosphate of Lime	71
Prairie Situations	159
Pulse	270
Patent Medicines	191, 302, 341
Recipes	291
Respiration	305
Relapses, how occasioned	310
Recapitulation	345
Spirometry	47, 81, 83, 166, 195, 272
Smoking, Effects on Throat	18
Shortness of Breath	306
Small-pox	324
Sea Shore	158
Sea Voyages	159
Spitting Blood	94
Starvation, Suicide by	72
Sick Headache	24
Stay at Home to Die	152
Some Candies poisonous	342
Symptoms, Deceptive	177
" Suspicious	218
" Enumerated	262
" of Dyspepsia	321
Throat-Ail, what is it?	5
" Symptoms	7
" how acquired	11
" Philosophy	40
" History	48
" Diseases	226
" First Symptoms	255
" Neglected, results of	256
Tables of Measure	290
" Food	284
" Mortality	335
Tobacco, Effects of	17
Tubercles, how formed	46
" Diseases of, Classified	266
" Not Necessarily Fatal	268
" Clusters of	274
Tendencies of the Times	145
Treatment of Unseen Cases	265
Theological Students	243
Tonsils, Danger of Cutting	309
Unseen Cases Treated	265
"Unwell"	312
Voice Organs Described	42
Vaccination	323
Women, Cases of, 26, 171, 173, 203, 212, 250,	311, 312
" Few Healthy	325
Washington at Morristown	187
" Death of	227
Whitfield's Oratory	252
" Death	258
Weakly Children	333
Young, City Education of	298
Young Ladies Education	329

INDEX

TO

TWO HUNDRED HEALTH TRACTS.

Air and Sunshine,
Apples,
Antidotes of Poisons,
Burying Alive,
Bites,
Bathing,
Beards,
Back Bone,
Beauty a Medicine,
Baldness,
Burns,
Bilious Diarrhea,
Bread,
Balm of Gilead,
Corns and Shoes,
Costiveness,
Colds Cured,
" Prevented,
" Neglected,
" Catching,
Catarrh,
Checking Perspiration,
Centenarian,
Consumption,
Coal Fires,
Cute Things,
Coffee,
Children at School,
Cures,
Clothing Changed,
Cholera,
Clergymen,
Cancer,
Corn Bread,
Children,
Convenient Knowledge,
Charms,
Curiosities of Eating,
Child Bearing,
Disease, Causes of,
Drunkenness,
Disease Avoided,
Dyspepsia,
Drinking,
Diet for Invalids,
Deafness,
Debt,
Duration of Life,
Dying Easily,
Drowning,
Dieting,
Diphtheria,
Diarrhea,
Dysentery,
Disinfectants,
Death Rate,
Deranged,
Erect Position,
Erysipelas,
Eyes,
Escape, Fire,
Eating,
Exercise,
Emanations,
Eating Economically,
Fruits in Summer,
Fifteen Follies,
Fireplaces,
Flannel Wearing,
Fifth Avenue Sights,
Fire Escape,
Feet, Cold,
Growing Beautiful,
Greed of Gold,
Genius, its Vices,
Great Eaters,
Gruels and Soups,
Hair,
Health without Medicine,
Healthful Observances,
Health Essentials,
Hydrophobia,
Headache,
Health Theories,
Habit,
Housekeeping,
Inconsiderations,
Ice, its Uses,
Inverted Toe-Nail,
Insanity,
In the Mind,
Kindness Rewarded,
Law of Love,
Life Wasted,
Loose Bowels,
Leaving Home,
Logic Run Mad,
Measles,
Medicine, Taking,
Music Healthful,
Milk,
Miasm,
Marriage,
Morning Prayer,
Month Malign,
Medical Items,
Mental Ailments,
Memories,
Nine Nevers,
Nothing but a Cold,
Neuralgia,
Nervous Sufferers,
New Dispensary,

Nursing,
One Acre,
One by One,
Obscure Diseases,
Poultices,
Precautions,
Presence of Mind,
Premonitions,
Private Things,
Physiological Aphorisms,
Pain,
Perspiration Checked,
Placeless, The,
Preserves,
Parental Training,
Prayer, The Morning
Potatoes,
Poisons,
Philosophy,
Physiological Items,
Posture in Worship,
Rheumatism,
Read and Heed,
Soups and Gruels,
Resignations,
Sitting Erect,
Shoes,
Sour Stomach,
Sleeping,
Stooling,
Skating,
Suppers, Light,
Summering,
Scalds and Burns,
Serenity,
Sores,
Small-Pox,
Soldiers,
Spot, The One,
Specifics,
Spring-Time,
Summer Drinks,
Sabbath,
Saving Ministers,
Sickness not Causeless,
Sayre, the Banker,
Summer Mortality,
Stammering,
School-Children,
Study, Where to,
Traveling Hints,
The Three P's,
Teeth,
The Placeless,
Urination,
Valuable Knowledge,
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ADDRESS,

"HALL'S JOURNAL OF HEALTH," New-York.

Many Great Thinkers Took Little Rest.

Sir James Sawyer, who has lately been discoursing on longevity to the members of the Acock's Green Institute, Birmingham, says the British Medical Journal, rightly insisted on "a sufficiency of sleep" as one of the things needful to make a man's days long in the land. But what is a "sufficiency?" Sir James defines it as one-third of the twenty-four hours. For what Matthew Arnold called the "average sensual man," that is to say the man of normal physiological needs and cravings, this amount is probably not too much. But some of the greatest workers of our day have done with much less than eight hours of sleep.

Dr. James Legge, Professor of Chinese in the University of Oxford, who has just died at the age of eighty-two, was, it is said, in the habit of rising at 3 a. m., and allowed himself only five hours of sleep. Brunel, the famous engineer, for a considerable part of his life, worked nearly twenty hours a day; friends and assistants have left it on record that he hardly ever went to bed, and yet never seemed tired or out of spirits. After working through a great part of the night he slept in his armchair for two or three hours, and at early dawn he was ready for the work of the day.

Sir George A. Elliott, afterward Lord Heathfield, who was in command throughout the great siege of Gibraltar, which lasted four years, never during all that time slept more than four hours out of the twenty-four. He lived to the age of eighty-four. In a recent number of Cosmopolis Prof. Max Muller records a conversation which he had with Alexander von Humboldt on the subject of sleep. "As I get old," said Humboldt, "I want more sleep—four hours at least. When I was young, two hours of sleep were quite enough for me." On Prof. Max Muller hinting that he found this a hard saying, Humboldt said: "It is quite a mistake, though it is very widely spread, that we want seven or eight hours of sleep. When I was your age I simply lay down on the sofa, turned down my lamp, and after two hours' sleep I was as fresh as ever." He lived to be eighty-nine.

Littre gives the following account of his labors during the printing of his dictionary, which was thirteen years in passing through the press: "My rule of life included the twenty-four hours of the day and night, so as to allow the least possible amount of time to the current calls of existence. * * * I rose at 8—very late, you will say, for so busy a man. Wait an instant. While they put my bedroom in order, which was also my study, I went down-stairs with some work in hand. It was thus, for example, that I composed the preface of the dictionary. I had learned from Chancellor d'Aguesseau the value of unoccupied minutes. At 9 I set to work to correct proofs, until the hour of our midday meal. At 1 I resumed work and wrote my papers for the Journal des Savants, to which I was from 1855 a regular contributor. From 8 to 6 1 worked on the dictionary.

"At 6 punctually we dined, which took about an hour. They say it is unwholesome to work directly after dinner, but I never found it so; it is so much time won from the exigencies of the body. Starting again at 7 in the evening, I stuck to the dictionary. My first stage took me to midnight, when my wife and daughter (who were my assistants) retired. I then worked on until 3 in the morning, by which time my daily task was completed. If it was not I worked on later, and more than once, in the long days of the summer, I have put out my lamp and continued to work by the light of the coming dawn. However, at 3 in the morning I generally laid down my pen and put my papers in order for the following day, that day which had already begun. Habit and regularity had extinguished all excitement in my work. I fell asleep as easily as a man of leisure does, and woke at 8 as a man of leisure does."

Littre was past forty when he began his work. He was fifty-nine when he began to print the dictionary, he was seventy-two when he completed it and he lived to be nearly eighty. These examples may, to use the consecrated phrase of the hagiographers, be more for admiration than for imitation; but they serve to show that longevity and a small allowance of sleep are not in all cases incompatible.

M. J. Kont contributes a brief ethnological study on the origin of the Roumanians, and Gaston Poix has a physiological paper on sleep and its hygiene. In answering the question, Is it necessary to sleep? M. Poix gives an account of experiments on dogs which were deprived of sleep to decide its inquiry, and says that after four or five days of complete deprivation the animal showed incurable organic lesions, and in spite of all that could be done, died. The younger the animal the sooner it succumbed. In fact, they were able to stand total deprivation of food better than a total deprivation of sleep, and M. Poix concludes that sleep is absolutely more necessary to an individual than alimentary nourishment itself. He tells, too, of two American doctors who set themselves to determine how long a healthy adult man could go without sleep, and who stayed awake for four days and three nights, when the experiment seemed about to prove dangerous and they gave it up. A much more important and practical question for the average individual is broached in this writer's inquiry, How long should we sleep? He calls to mind the well-known instances of Goethe, Humboldt, Mirabeau, Schiller, Frederick the Great, who could do with only two or three hours, and Napoleon and Kant, who got along with four or five hours. Of course these are phenomenal examples of men in whom the cerebral activities were developed to a unique extent, and for his purposes M. Poix should answer the question, How long should the normal individual sleep? He says that this depends on whether the individual is a child, an adult, or an elder. A child up to two years ought to sleep eighteen hours; from three to six, fourteen hours; from six to eight, twelve; and from eight years on to adolescence, ten hours. As for the adult individual with a normal brain activity, he prescribes seven hours, but adds that it is much better to exceed than to reduce this amount, as eight or nine hours are very much better than five or six. The problem is very much diversified with old people, as the capacity for retaining their cerebral activities differs vastly in different individuals. Some sleep very little and others sleep more than a man in his prime.

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SLEEPLESS FOR FIFTEEN YEARS

Remarkable Affliction of a Philadelphia Man.

His Case Has Baffled All the Physicians.

HOW HE SECURES REST

Impossible as it may seem there is a man living in Philadelphia who has not been asleep for fifteen years, says the Philadelphia Times. He is William R. Kelly, an employe of Baldwin's Locomotive Works, and lives on Melon street, a thoroughfare near Sixteenth street and Fairmount avenue. His condition completely baffles the several physicians he has consulted. Heretofore eighteen months has been considered as the utmost limit of time that the human frame could withstand chronic wakefulness without collapse and death. Yet in Kelly's case it is almost as many years since he has enjoyed a night's sleep.

The explanation of how he defies one of the most arbitrary of nature's laws and still lives is exceedingly interesting. Sleep is, at best, largely a matter of nerves, and they are so closely allied to the brain that the terms are almost synonymous. The nerves must first be lulled into unconsciousness before the oblivion of slumber shrouds the mind.

Physicians will tell you that the mental effort of thinking about, and trying to go to sleep, is a sure invitation to wakefulness, because the nervous forces are kept busy when they should be at rest. Opium and excessive alcoholic drink produce insensibility through their action on the nerve centers of the brain, just as coffee and tobacco have the opposite effect. Insomnia, or sleeplessness, is a disease of the nerves, and Kelly's are in such an irritated and shattered state that it is well-nigh impossible to lull them into a sufficiently passive condition as to produce slumber.

Kelly is now about twenty-six years old, and is a pleasant, boyish-looking young fellow of slight build, medium height and smooth face. He is a native of Rockford, O., a town near Cleveland. His wakefulness may be traced to a severe attack of nervous prostration which he had in Rockford when about ten years old. His suffering was so acute that he was forced to spend six months in a Cleveland hospital, and ever since has not known a night's sleep.

About ten years ago Kelly came to Philadelphia, and although he has consulted many physicians from time to time no one can apparently give him any relief. Some thought that a defect in his vision helped to irritate the nerves until insomnia resulted. Others gave him medicines to invigorate his system, and thus reinforce his shattered nerves; but with no permanent results.

Kelly formerly chewed quantities of plug tobacco and was very fond of coffee, drinking several quarts of the beverage daily. He was advised to give up these luxuries, but found that abstinence had a more disastrous effect upon his system than did indulgence, as the nicotine and coffee tended toward quieting the nerves.

Opiates were administered, but gave no permanent relief. It was even suggested that a cure might be effected through hypnotism, because the partial unconsciousness of the trance results in slumber after a certain period. In this case also it was feared that the remedy would in the end prove worse than the disease. And so he lives on, month after month, and year after year, without a moment's unconsciousness, night or day.

Kelly says that every night he goes to bed about 11 o'clock, closes his eyes and relaxes his body. Then he waits until morning, with brain as active as at midday, and never losing consciousness of what transpires around him. His nerves are much more sensitive than the magnetic needle of a compass, the mercury in the thermometer or spirits in a barometer. He hears every passing footstep on the sidewalk, the striking of distant clocks hour after hour, the ticking of the time-piece in the room beneath his chamber.

Sometimes the strain become intolera-

ble, and he rises and dresses long before daylight and wanders through the house, waiting for the morning and the appearance of the rest of his family, who are enjoying the great gift of repose that is denied to him.

How is it possible for Kelly to live and do his daily work without sleep? The explanation is simple. When we sink into slumber nature makes the mind lose acute consciousness so that the body will be forced to be absolutely quiet for hours together. But not one instant during these periods of oblivion does the action of many of the vital organs cease. The heart still beats, the intestines continue their functions, the lungs expel and inhale air as during waking hours, the body is turned from side to side to obtain easier positions, the vital tissues exhausted during the labor of the preceding day are rebuilt for the struggle that is to come, and even the brain weaves a strange fabric of dreams, depicting scenes, or often whole dramas, realistic enough to strike terror to the heart and awake us.

Kelly is denied a state of unconsciousness, but he obtains the rest necessary to maintain life by forcing himself to lie absolutely quiet a certain number of hours every night, so that nature can accomplish the same work of rebuilding and rejuvenation as occurs during a healthy person's period of unconsciousness. This rest becomes the easier in his case because his daily labors are those of brawn and muscle rather than the brain, and fatigue of body is more easily overcome than exhaustion of the mind. The result is that when he arises from his dreamless bed the mind is fatigued and the body rested, and then comes relief for the brain in the muscular exercise of manual labor.

Even though these circumstances have made it possible for Kelly to exist for such a long period of time without sleep, the strain upon his system is most severe, and a healthy slumber becomes more and more of a necessity of life as each week goes by. For some time past his friends have advised Kelly to consult specialists on nervous diseases at the University Hospital, and he has at last decided to do so, hoping that he may thus end his years of wakefulness.