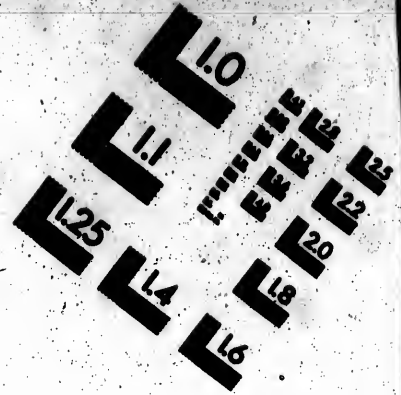
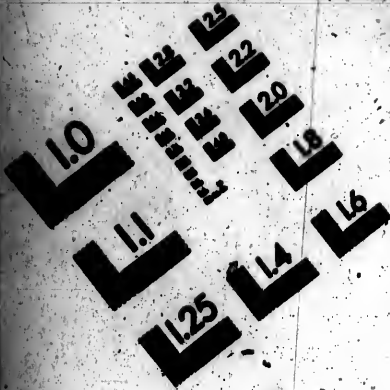




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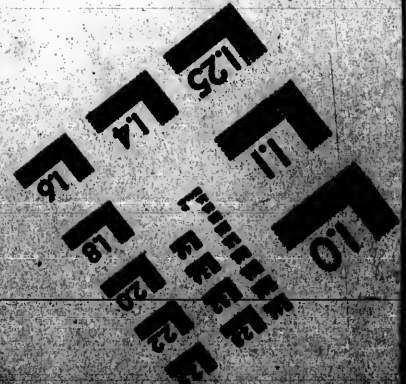
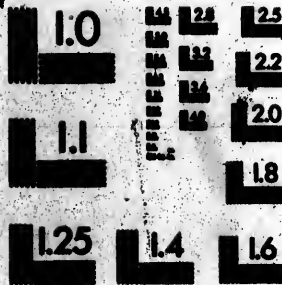
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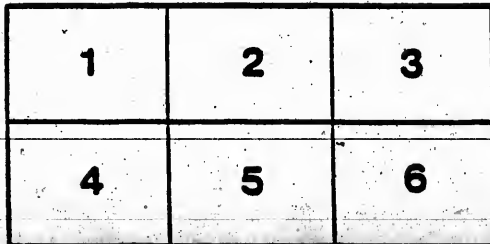
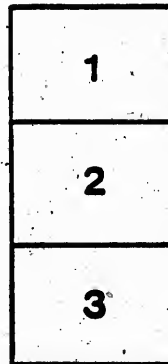
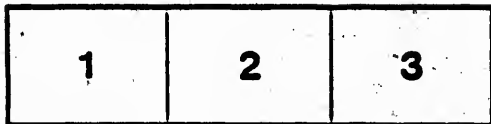
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# VENTILATION.

## CHAPTER I.

In these days every school boy knows something about VENTILATION. He knows, for instance, that people must have a large and constant supply of fresh air, if they would preserve health and life;—he knows that the breath of man is the most deadly poison—that “collected in a jar it will kill mice, and accumulated in a room, it will kill men!” And if he have the misfortune to gather knowledge, not from a tree in a garden, but from the desk of a close school room, he has a practical experience of the pursuit of knowledge under difficulties, and soon finds, without reading about the Black Hole of Calcutta, that mind and body are both suffering for want of fresh air. If our school boy is a fisherman and catches “shiners” to bait for bass, he has probably often seen his bait turn on their backs in his pail of water, and after a little choking, quietly expire; and he knows the cause, viz: want of air,—that in the water is exhausted, and he has not put fresh water in to supply its place.

Were a modern ball-room or dwelling air-tight, the inhabitants would soon share the fate of the “shiners;” but luckily for them, neither carpenter nor mason work has reached that point of perfection, so they are only slightly suffocated and poisoned, and soon come to life in the fresh air. Doubtless many will exclaim against this. The entranced *Augustus* will repudiate with scorn the idea that when *Angelina* reposed on his arm in a polka and whispered that she loved him everlastingly, it was only poisoned air rendered sonorous by the action of a larynx tongue, teeth, palate and lips. “What folly!” the old fogies will say, “to insinuate that breath is hurtful—just as if nature did not know when she made man a social animal, whether breathing each other’s breaths, would



prove injurious." Nevertheless both old and young will, immediately after expressing contempt for ventilation, complain of the *close-ness* of the room, or steamer, or railway car, and rush to the door for relief.

But notwithstanding the ignorance and unbelief of a great portion of the world, scientific men are still busily engaged in devising ways and means to protect man by means of physical and *mechanical* ventilation, from being poisoned by his fellow man. We have now all sorts of ingenious contrivances under the second system,—*fanners*, forcing pumps, sucking pumps, screws and other contrivances, too numerous to mention. In 1668, H. Schmits published the scheme of a great *fanner*, which, descending through the ceiling, moved to and fro, pendulum wise, within a mighty slit. The movement of the *fanner* was established by means of clockwork, more simple than compact; it occupied a complete chamber over head, and was set in noisy motion by a heavy weight. The weight ran slowly down, pulling its rope till it reached the parlour floor. As for the screws they are admirable on account of the startling results sometimes produced. Not many years ago a couple of fine screws were adapted to a public building, one to screw the air in and the other to screw it out,—but horror of horrors, both screws blew down with a gust of contempt upon the airy projector. Of the *fanners* it is not worth while speaking; they answer admirably for cooling the air in India, where a servant can be kept to move one in each room; and Mr. BARRY'S monster *fanners*, moved by steam, cool the air for the British House of Commons at an expense of over half a million dollars. But as for ventilation—that is circulating fresh air—they are perfectly useless. So far, then, as *mechanical* ventilation adapted to buildings is concerned, it may be pronounced a failure.

But *Physical Ventilation*—that which imitates the process of nature, and whose chief agent is heat; has at length established itself as a great success. In nature it is said—the Sun is the lord-high ventilator. He rarefies the air in one place by his heat, elsewhere permits cold and lets the air be dense; the thin or warmed

air rises and the dense air rushes to supply its place, so we have endless winds and currents, Nature's ventilating works. Of course, a common fire-place with a quarter of a cord of wood; or an hundred weight of coal, is a good imitation of the Sun's system—the fire makes an ascending current, and the cold air rushes from the doors and windows to the chimney, as from surrounding countries to the burning deserts, as the draughts about the legs, necks, and backs prove to the most sceptical. While one side is being toasted, the other side is being frozen, so that a man has to revolve as on a spit, in order to let each side have its proper quantity of heat and cold. The old settlers have a superstition that so soon as they build a new house and move into it they are sure to die. This has a good deal the appearance of being the rule. But the reason is, not that a supernal power envies their new abode, but that they themselves are the authors of their own misfortunes. For instance, an old couple have been in the habit all their lives of living in a log house, with walls windows and doors not over tight and a dutch fire place, which when in full blast would almost carry one of the youngsters out at the chimney top. In other words—they live in the midst of a most splendid system of ventilation, and as a consequence enjoy the most robust health. From this they move to a new house with no fire place whatever and no open flues. Here they sit themselves down by cooking or parlor stoves, and half stupified by the foul and over heated air, dream of long years of happiness. Soon, however, the blood becomes less and less pure and disease sets in to obtain an easy victory!

How differently all this might be managed; how easily such a misfortune might be remedied. With open flues or fire places in each room, and a ventilating stove in the hall connected by a pipe with the air without, not only would there be no draught, but every room in the house would be kept at the same temperature by a constant stream of warmed, not heated air, which would be changed and replaced by fresh air every four or five minutes during the day. "Yes, yes" a venerable old lady will say, "I suppose I might have "all this at the expense of a hole or flue as you call it in every

"room, but you don't catch me spoiling the appearance of my "rooms for the sake of ventilation!" It is in vain to tell such people that a house with open fires in every room can be built at the same expense as a house with no fire at all—the real objection is the *hole in the wall*—however neatly it may be disguised by ornamental registers or fans. The best of the joke is that the same parties who object to fires or fire places, will stick the walls full of windows. They will have something nice to look at no matter how filthy and unhealthy the *air food* which they are inhaling to cleanse the blood!

Thanks to modern architects, if we go to church we can doze through the most delightful sermons. If we go to balls or concerts or public meetings, we can pant after fresh air, and come home with head-aches, inflammations, and incipient consumptions.—Long may they believe that lungs are wind instruments of brass; and let us hope that when they do get a ventilating fit they will prefer strange machines, pumping, screwing, steaming apparatus, to the simple pure air of heaven, which requires but a pipe and a ventilating stove to set it floating day and night through all our dwellings.

The celebrated HUMBOLT, who died the other day, considerably over ninety years of age, attributed the good health he enjoyed to his love of fresh air. He tells us that in one of his travels on ship-board, a sailor was reduced by fever to the last gasp, and at his earnest request was taken on deck to die. But strange to say he no sooner felt the cool air than he began to revive, and he eventually perfectly recovered.

Those then who exclude the fresh air from their lungs, take the first important step towards ruining their constitutions. The more they sit in close rooms over that wholesale destroyer the *box-stove*, the more tender they become and the more they crave cloaks, coats, wrappers, comforters, India rubbers, and all the other blessings of this life. "Look!" they exclaim, "at the progress of Man.—Who ever saw a *Lion* in cork soles, or with a sore throat? Can the *Tiger*, mount his great coat when he goes out to a social party?

Does an Eagle soar with an umbrella over his head to keep off the sun or rain?" Man alone, comprehends these luxuries; and it is when he is least healthy that he loves them best.

But sitting by stove heat in an unventilated room is nothing to sitting in a close bedroom. Whoever travels a good deal is often taken to a room with a chimney indeed, but closed with a fire grate so that there is no possibility of the foul air escaping during the night. There is not even a stove pipe hole into the chimney, and the landlord, with a praiseworthy care for the health of his guests, has not stopped either with tin, cloth, or wood. There is a lock on the door so that you may shut in all the foul air, and keep it in. If you happen to be a man of note, you are probably shown to the best room that contains a suffocating machine called a curtained bed. So it is not enough to have diluted foul air, it must be condensed as close as possible round your person. This may be called the Poison Vapour Bath, and is enjoyed in the greatest perfection in a feather bed. The feathers prevent the transpiration through the skin, and most effectually smother the flesh. But then lying on feathers is a sign of gentle breeding. An ancient writer tells us how a king's wife found out whether her lady guest was a real born princess. She placed three peas in the young lady's bed, and over these fifteen feather beds. In the morning the young lady complained that she had been prevented sleeping by the lumps under her sheets. So you see blood will tell. Next to the close stove room, the unventilated bed room and feather bed are the most ingenious contrivances for the destruction of human life, and to complete the business many people cover their heads with night caps, or stick them under the bed clothes till they are obliged to put out their noses to prevent actual suffocation!

If I were to treat in scientific terms upon the properties of air, I might be as unfortunate as the young Cambridge student who was airing his wisdom at a dinner party. He was most eloquent upon heat and cold, radiation, rarefaction, polar and equatorial currents, &c.; when he had brought his discourse to an end, he turned round upon a grave professor of his college, saying, "And what, sir, do

you believe to be the cause of wind?" The learned man replied, "Pea-soup, pea-soup!" So I shall avoid, as much as possible, scientific or uncommon terms, and content myself with describing to you in a plain way, some of the commonest properties of air.

Air is composed of two simple elements, and one compound element in very small proportions. About 80 parts in an 100 of the air, is composed of a kind of air or gas called nitrogen, a simple element and apparently of no use except to dilute the oxygen, the name of the other simple element, a gas or air composing about 20 parts in an 100 of the atmosphere. The compound element is also a gas called carbonic acid, and forms about one part in 2000 of pure air. It is compounded of oxygen and carbon, a simple element or substance which composes the greater part of coal and gives to it its chief characteristics.

The air cells of the lungs are filled upon the principle that gravitation causes air to rush into any cavity. These are situated on either side of the chest, and communicate with the air through the windpipe and nose, or mouth. Three evident effects are produced upon the blood in the lungs by the action of air. Its color is changed from a purple to a bright red; its temperature is raised, and it is diminished in quantity. Doubtless other effects are produced, but about these there is no dispute. The degree of effect produced, depends upon the quantity and quality of air to the action of which the blood has been subjected in the lungs.

The composition of the air has been already stated; but after it leaves the lungs it is very different; instead of 20 parts in an 100 it contains but 16 of oxygen, and contains nearly 4 parts of carbonic acid. It is very full of moisture as may be seen by breathing upon glass. Its proportion of nitrogen has not changed in an appreciable degree. If a person apply his mouth to the mouth of a bell-glass bottle or decanter, the bottom of which is wanting or has a hole broken in it, and then push the bottle a short distance into a pail of water, he can draw all the air in the bottle into his lungs, from which he can breathe the air back into the bottle. This must be so held in the water that it shall follow up into the bottle as the

air is drawn out, and when the bottle is again filled with air, it must be held quite steady, with the mouth yet applied to it and the bottom yet in the water. In the meantime let a match be lighted, and when it is burning well, remove the mouth and drop the bottle an inch into the water, and thrust the match into the mouth of the bottle, when, if the experiment have been well managed, the flame will instantly go out. Showing that the air is so changed in composition that a match will not burn in it. If any one requires a further proof of the unhealthiness of air after it has been once breathed, let him inhale the air from another persons nose or mouth, or from the cool fresh air of morning into a crowded unventilated railway car which has travelled all night.

Then, as the air coming from the lungs is not suitable to be received again, and as a large quantity is used in a very little time, it follows that all rooms should be perfectly ventilated, by having communication with the Grand reservoir—the atmosphere surrounding the earth. This should evidently be more carefully attended to during the night than during the day, as then the opening and shutting of doors, and the fires in cold weather, will tend to purify and change the air in a room. Experiment and accident have proved that carbonic acid breathed out from the lungs is so very poisonous that 10 per cent. will destroy the life of animals, and many human beings have lost their lives by going into wells, tombs and other places where it existed. The burning of most articles produces a great deal of it, coal a vast quantity when burning, and a pan of coals placed in a chamber has produced so much as to destroy life. If a grate do not draw, the gas is likely to pass into the room without any smoke, a great cause of headaches, &c. Doctor *T. S. Lambert* above quoted, says: "In regard to pure air, the old adage seems true, 'nothing cost, nothing worth.' If air could be monopolized and sold by the gallon, its value would soon be appreciated. He continues—'A healthy state of the body generally, with active exercise of all parts of the body, but particularly the muscles of inspiration and expiration, and *ventilated* apartments, are the chief things which conduce to the perfect action of the air and blood upon each other in the lungs.' And as it has been seen that one of



the chief, if not *the* chief duty of the lungs, is to produce heat, it follows that if a person would be warm he must preserve his general health, take exercise, and *breathe pure air!* Hence it is to be inferred, that a person will sleep warmer the coldest night in winter with his apartment ventilated, which cannot be done perfectly except there be communication with out doors. Especially during a cold night will a person be kept warmer and be in less danger of catching cold, if a sleeping apartment be ventilated, not in such a manner that a draught of air shall come upon the person, but at all times perfectly."

Thus we see that pure air acting on the blood produces health, and foul air disease and death. But our object is not to write an essay on air, but on the means of bringing it into our dwellings and Railway cars.

We have said that mechanical ventilation as applied to houses, is a failure. Not so mechanical ventilation as applied to Railway Cars, as those of our readers who have travelled in BUTTAN'S ventilated cars on the GRAND TRUNK, can testify. There we see that by means of a ventilating cap on the top of the car, a continuous stream of air, purified in summer by passing over a large shallow tank of water, is furnished to the inmates of the car. The same quantity of air is also supplied in winter, but warmed by means of a simple but most efficient ventilating stove. No matter how much dust there is outside, not a particle comes into the car, because it is deposited in the water tank underneath. And no matter how much filthy tobacco is spit or blown out of the mouths of the passengers, or how diseased their lungs or throats may be, the strong downward current of air carries off the perfume without compelling their fellow passengers to swallow it. Indeed, so perfect is the working of BUTTAN'S system in summer that the passengers enjoy the benefit of steamboat, with the rapidity of railway travelling. His motto is "pure air and plenty of it."

As regards BUTTAN'S mode of ventilating houses, we have not space to describe it, but we may say that he puts LUNGS into the building. That day and night, in summer and winter, there is a



stream of fresh air, pouring through every room in the house. Of course it is warmed in winter by passing through a ventilating stove or a ventilator as Mr. Ruttan delights to call it. This is the kind of ventilation which we denominate *physical*, because it is the action of nature. As the heat of the desert draws the air from the surrounding countries, so the ventilating stove attracts the cold air from outside the house or the railway car, and this it expels the cold air and takes its place.

Praising any particular system of ventilation may offend the water or hot-air architect, we will leave this particular subject to our subject at present, and devote a few pages to consider the causes of ill health than the want of fresh air.

## CHAPTER II.

Travel where we will, whether on railways or steamers, enter what society we may, we find nine-tenths of our fellow mortals suffering from ill-health. Why is this? Because from the cradle to the grave we set the laws of health at defiance!

No sooner is the blessed baby born than the watchful nurse crams down its throat a dose of physic, and fastens its first dress with innumerable pins. What the calomel and honey, or castor oil, is unable to effect inside, a sly prick effects outside, and the troubles of the little "pale face" begin. Ten to one that the doctor is sent for and other doses are rapidly administered, some preparations of laudanum probably, when the little sufferer is put into a cradle and by active rocking sent to sleep by producing giddiness, giddiness being a disturbance of the blood's usual way of circulation. Perhaps when the dress is changed, the establishment of the *rose* will be discovered. But the nurse has learned one thing in the mean time, *vis*: that preparations of laudanum save a world of trouble, and that giddiness if it does not produce healthy sleep, at all events, produces quiet! The next torture the poor child undergoes is to be awakened out of its sound sleep to have some food. Nature of course does not know how often the infant ought to be fed, (altho' she would feed

it every four hours,) so she is to be taught a lesson. After the food, the child is to be put to sleep again, either by the rocking chair, the cradle, or some of *Mrs. Winslow's* soothing syrup.

Well you have the baby at advantage—so pitch into it what you can. Vary its pleasures by alternately suckling and phisicking; attempt no regularity in nursing, keep its stomach in a constant ferment, and you lay the foundation of a dyspeptic constitution and a miserable life.

In weaning a child, most people are guided by their own convenience, they will not allow nature to have a hand in the business at all, but will wean either before the first teeth are out, or after they have arrived at the biting point. Then instead of weaning gradually, they wean all at once, by means of bitter aloes or some other drug. Were the ladies weaned of their tea by being suddenly transferred to gall, how would they like it? or from hooped petticoats by being rolled like *Regulus* in a cask stuck full of *spikes*; yet the *mode* would be about as reasonable in one case as in the other.

Most houses are so constructed that no fit room is retained for a nursery. Indeed, in most cases, a common unventilated bed-room is the only convenience for the nurse and three or four or more children. In this room there is perhaps one window, which is kept carefully closed and stuffed all winter, so as to keep out draughts! If there be a chimney, it is of course closed with a board, and the door is shut to keep in the noise. Here the poor delicate things grow up like stalks of celery, white and tender, and by the same process—the exclusion of light and air. Then, as if the mother really wished to decrease the population, they are sent out to walk in thin upper dresses and *bare legs*. How would mamma and papa like to be treated in the same way? Would they not find it rather cool comfort to imitate their first parents in this climate? and yet their children are of the same flesh and blood as themselves! This exposure of children is one reason of the great increase of consumption, and should be discountenanced by every thinking parent.

Children should sleep, eat, and exercise regularly; let them not

be tempted to do one or the other out of the regular course. On no pretence whatever let them "piece" the day through. The stomach requires three or four hours to digest a meal, expects a certain routine of tasks, and between each task looks for a little rest. Yet how little are these requirements heeded. Sweetmeats of alluring shape and color, with other palatable delicacies, are invariably added to the diet of our children, and given between meals. In this way the stomach, if not overburdened by colored candies, is kept in a constant state of indigestion. The child becomes pale and sickly, and the triumph over nature is complete! Let a man place himself in the position of a patient, let him awake some fine morning with a dose of castor oil down his throat; let him then be washed and swathed in a sheet which shall be stuck full of pins, one or two of which are thrust half an inch or so into his flesh, let him then swallow a dose of laudanum, and on the top of that be rocked to the verge of apoplexy in a cradle. After he has been asleep for a couple of hours from sheer exhaustion, let him be awakened by a pickled herring being thrust into his mouth, *and see how he would like it!*

But supposing, contrary to probability, that the child becomes a man, let us see what he does to renovate his constitution. Ten to one he has been manufactured on the forcing system, into a merchant or a professional man, and has taken up his abode in some densely populated quarter, in order to be near his office. Nature intended him to be broad chested and straight backed, but thanks to early training and confinement he is narrow chested and stoops forward, the shoulder blades projecting like the wings of a bird. What his wife and daughter have accomplished through the agency of stays, he has accomplished through study and want of exercise. He don't see why his own lungs and the lungs of his wife and daughter should have room to play. He never played himself and don't believe in it. True his wife and daughter admired the English cricketers last fall, and wished perhaps with Desdemona, "that Heaven had made them such a man" as one of these. Doubtless they thought them a superior race, never considering that fresh air and

exercise might have conferred the same boon upon the husband and the brother. It is unfortunate that the lungs have any work to do, but they have, and rather important work too, it being necessary to put the breath of life into the blood, which they are unable to do properly when cramped for space. By this compression of the chest men as well as women are rendered nervous and incapable of any exertion and fall an easy prey to the Doctor and the Doctor's wife.

The ladies, however, do not allow us to suppose that they have lost flesh. There is a fiction of attire which would lead any speculative critic the belief that American women have no waists, should be in their waists, to bulge up some inches in front and some inches lower behind. But on application to a doctor or milliner it will be found a groundless theory. The prompters behind the scenes, do not hesitate to assert that the ladies are the same all the way down. We have hinted at our gentleman's occupation, let us now see what is his recreation! Does he go to the gymnasium, or the cricket field? Nay, does he even play ten pins or base ball? No, none of these things move him, but about ten o'clock at night he goes out with his wife and daughter to *spend the evening*. Thinly clad and packed in a close carriage they arrive at their hosts, jump out on the cold pavement, in thin boots and shoes and run shivering into the house. Instead of keeping from the fire, as all chilled people should, they rush up to a red hot stove in a dressing room, from whence they descend to drink a cup or two of some hot liquid called tea or coffee. From thence they enter the dancing room, where, from want of ventilation, the upper sash of the window has been let down, or the lower sash raised—"it is so very hot." Here a nice country nose will at once detect the nasty foul air, tho' it is mixed with eau-de-cologne. Now the gentleman cuddles some lady, and the ladies are cuddled by some gentlemen, and they spin around the room like teetotums. Presently they take an ice—then a spasm, then another dance, then a walk on the verandah "it is so very hot"—then a glass of wine, then another ice—then maccaroon, then supper. Sandwich, turkey, patties, champagne, blancmange, bonbon, champagne, sherry, champagne

husband and  
y work to  
g me  
the demon or rather Daimon, genius, or evil spirit of  
horribly, and mutters, yes, yes, all your very bad  
a. m., with stomachs full of indigestion, splitting  
or inflamed eyes, our company return home

in the house alone that ladies strive to thwart  
their faces pale and have them

darkened o'er with the pale hue of thought,"

that they pull down the blinds. They must,  
for exercise! save the mark!—put a veil between  
the sun and the sun, and carry on high a great shield nam-  
ed a *peach*, to shield off his rays. They know better than to let the old  
god kiss them into color as he does the peaches. No, they will re-  
main green fruit to the end of the chapter, and do all in their power  
to eradicate what little of the rose their folly has left. They  
prefer being like the lilies, "which toil not, neither do they spin, yet  
I say unto you that Solomon in all his glory was not arrayed like  
one of these!" Do these fair, frail creatures ever read! If they do,  
have they not seen that in times of pestilence, death, who loves the  
dark, strikes three victims on the shady side of a street, for one on  
the sunny side? Did they ever see a house shielded from light  
and heat by trees, that was a healthy abode for man or beast?  
Never. Yet they will persist in keeping their blinds down for fear  
of faded curtains or carpets, whilst they themselves moulder into  
early graves.

We don't know which is the greater benefactor, T. O. KEEPER,  
who gives us pure water in abundance out of all sorts of impossible  
places, or BUTTAN, who gives us air. One thing is certain, that if  
these two reformers, the one with his fresh air and the other with  
his fresh water, are allowed to go on much longer, they will compel  
us to be more healthy in spite of ourselves. Will not some other  
sanitary reformer arise and give us "light in our dwellings." There

is quite as much difference in the healthfulness of artificial and natural light, as there is between the two luminaries in their brilliancy. The light which comes down from the sky, sends no air out of our mouths, but it comes charged with many subtle principles which have a purifying, vivifying and a powerful ally of health, and we make war against it. Artificial light contains no such blessings. When the gas from half a dozen jets into your unventilated room, and it gives light; when your candles become shorter and they are burnt out,—*Do you know what happens?* Nothing ceases to exist. Your camphene has left the lamp, and has vanished out of being. Nor has it been converted into anything; it is a visible action; and candles are no more converted when they are burning, than breath is converted into anything you are talking. The breath having produced speech, and the atmosphere; gas, camphene, coal oil, and candles, having produced light, do the same. If you saw fifty wax lights shrink to their sockets during the past week in an unventilated ball room, yet, though invisible, they had not left you; for their elements were in the room and *you were breathing them!* Their light had been a sign that they were combining chemically with the air; in so combining they were changed, *but they became a poison!* Every artificial light is, of necessity, a little workshop for the conversion of gas, oil, spirit or candle into respirable poison. You will therefore see that the more we have of such a process, the more need we have of ventilation. While upon the subject of light, we may mention that the best plan for weakening the eyes and necessitating the use of glasses, is to read or work by a fluctuating light. By fluctuating light is meant a candle that requires snuffing, or a lamp that requires turning up. The joke of them consists in this: they begin with giving you sufficient light, but as the wick grows, the radiance lessens, and your eye gradually accommodates itself to the decrease; suddenly they are snuffed, and your eye leaps back to its original adjustment, then begins another slide and another leap back, and in course of time, lamenting the premature approach of old age, you invest in a pair of spectacles."

We have said above, that T. C. Keefer, C. E., gives us good



We point to him specially, because he is the engineer of the Victoria water works, and Hamilton water works, and we are glad to hear, for the future capital of Canada, that he is to be employed there, as a blessing upon it. The KEFFERS seem to be an English family. We have SAMUEL KEFFER, the real engineer, who has designed the largest Canal, the St. Lawrence Canal, the largest Inspector of Railways, and now Assistant Engineer of the Board of Works. Then we have JOHN KEFFER (whose "*Philosophy of Railways*" set all the world on fire) the locator of the site of the VICTORIA water works, and Surveyor of the Grand Trunk line—a very able man, ultimately selected. Then we have another member of the *Australian Parliament*—a man of great Canadian talent is honored even on the other side

of digression. Water, water, is in every one's mouth—just where it ought to be when a man is thirsty; it rains from Heaven, it leaps out of the earth, it rolls about the land in rivers, it accumulates in lakes, three-fourths of the surface of the globe is water, yet there are men unable to be clean. In a great city water, we are told, "is the maid of all work," has to assist our manufactures, to supply daily our sauce pans and tea kettles, cleanse our clothes, our persons, and our houses, provide baths, and flood away the daily refuse of the people. A man to be healthy ought to use at least a barrel of water daily, in washing, bathing and drinking. Rome, to supply water at the rate of more than 800 gallons to each citizen—that was excess. People in small towns have more trouble obtaining the luxury than those in large towns, because they cannot afford water works. They must therefore be content with enough to cook, enough to drink, and enough to wet the corner of a towel. As for bathing, that seems to be out of the question in a country abounding in water; hence one half the dyspepsia of those who, if they washed themselves, would enjoy good health.

Let us go back a thousand years, and look at the Persian aqua-



ducts, attributed to Noah's great grandson,—at Carthage, at Rome, at Constantinople, at Jerusalem, at Mexico, at the Aztecans, Mexicans,—at what Rome did, and acknowledged by the most civilized man, in an unripe and half civilized condition, understood the art of health and comfort was very intimately connected with the use of fresh water. Look at the savage wherever you go, and you will find him a cold water man. The Indian savage washes himself so constantly, that he is the other extreme. One would think that the philosophers of the Platonic school and deemed the body to be a machine. Thus, the temperance men have come to the study of the internal arrangements, but who ever heard of the external side application! According to their ideas, a man should draw so many feet of water, and we see it registered on the stern. By the way, is it not a pity we never thought of electing MAHOMET to the office of prophet, when his fundamental principles were "cleanliness and temperance." Well, there is this, at least, to be said in favour of temperance societies—they do not pass the bottle. They don't ask their friends to taste another bottle of that old port, made of doctored elderberry, or try a little more of that sugar of lead and gooseberry, with a body of rhybarb, under the name of champagne. The ordinary manufacture of choice wine for the people requires the following ingredients: for the original fluid, cider, or common cape, raisin, grape, parsnip, or elder wine; a wine made of rhybarb for champagne, to these may be added water. A fit stock having been chosen, strength, color, and flavor may be added on it. Use is made of these materials: for color, burnt sugar, cochineal, red sanders wood or elder berries, plain sugar for strength. For nutty flavor, bitter almonds; for fruitiness, spruce; for fulness or smoothness, honey; for port wine, the texture of the seeds of raisins; for bouquet, orris root or ambergris; for roughness or dryness, alum, oak sawdust, rhatany or kino.

Of good wine, health requires none, though it will tolerate a little. If we take a glass or two of the pure thing, we may expect a little indigestion. But if the wine is bad, no one can tell to what disor-

may not give rise. As for brandy, whiskey, gin, and other liquors made from corn, they are eminently destructive to life. If our readers drink such villainous compounds, it is not to be wondered upon them. As, however, a large number of people still drink wine, we here insert the TEST of pureness of Germany.

TEST OF PURE WINE.

To a pint of wine add two drachms cream of tartar dissolved in a pint of distilled water, till it be dissolved. The liquor is then filtered through paper into a newly stopped phial. From this phial drop into a small glass filled with wine, a few drops of the water, and deposit only a white sediment. If it contains no metallic impurities, it will be black or even muddy, if its color be dark red, if it have first a sweet and then an astringent taste, it is certainly impregnated with sugar of led, or some other impregnation of that metal equally destructive. If, however, the dark color be of a blue cast, not unlike that of pale ink, we may expect the wine to contain iron in its composition. Lastly, if the wine be impregnated with copper or verdigris, it will deposit a sediment of a blackish grey color. This experiment ought to be made with a fresh prepared test (which any druggist will put up) in the open air.

As to the use of spirits and bad wines, it is impossible to say their conduct as it deserves. The night before King Edward III. was visited by the ghosts of his ancestors. What a dreadful visitation it would be if the spirits were visited on his death bed by the ghosts of his ancestors. He had been the means of sending to premature graves many of those whom he would feel about as comfortable as did the *hundred*, of whom Bede tells us that on his death bed a ghost exhibited a scrap of paper upon which his good deeds were written—then the door opened, and an interminable file of ghosts brought in a mile or two of scroll, whereon his misdeeds were all

registered, and made him read them! Fathers killed, broken hearted, children brought up in sin and  
make up a very pleasant sight for a man, who, in a  
be called upon to give an account before his  
the cries of "justice!—justice, upon  
the lowest pit of perdition, and  
mercy!

But it is not our  
water question. Our  
before our readers, and  
length of days to use the  
inwardly. If people  
the most harmless intoxicating  
its use is natural. Lard  
There is no doubt that its  
eating properties. But few people  
not like to be made cheerful harmlessly, and whatever sustains  
cheerfulness produces health. We know very many old ladies, and  
some young ones too, who keep up the  
and to such an excess that a doctor  
the effects of liquor. But we don't know that it does much harm  
except making them nervous and talkative. We should not how-  
ever, be drunk *hot*, but warm. Hot  
the stomach and consequently injure  
advantage over wine, beer, &c., it  
and invariably produces jollity! For  
we refer the reader, if he be married,  
ing bee, where ladies love to congregate  
huge tea garden, where the plant is  
But what of milk? Is it deserving of  
bles? Certainly. It is the food as well  
The  
infant's appetite is all for milk. Not  
chalk, the brains of sheep, oxen and cows, flour, starch, treacle,  
whiting, sugar of lead, arnotto, nise, &c.; (see Mr. Rugg, of Lon-  
don, and Frank Leslie of New-York) but good wholesome milk from  
the country, or from your own cows in town.

CHAPTER III.

FOOD.

"an infant's appetite is all for milk";  
 to that lamentably simple diet.  
 advertisements and you  
 the most conspicuous of  
 These are the pro-  
 impel nature to be  
 Professor Croft  
 said to exist chiefly  
 ounds which exactly  
 bumen, and caseine.  
 on: fat and starchy  
 quors. If a person take  
 said to be wasted; if he take  
 is wasted, and part of it the body  
 oks away as fat. The correct diet of a healthy man is eight parts  
 of fuel food to one of nourishment. This preserves equilibrium, and  
 suits therefore, an adult; the child which has to become bigger as  
 it lives, has one part of nourishment. And so *Dr. R. D.*  
*Thompson* It has been often copied—the propor-  
 tion

	Nourishment.
(animal).....	1 to 2
.....	1 to 24
.....	1 to 5
.....	1 to 7
(animal at rest).....	1 to 8
.....	1 to 9
.....	1 to 10
.....	1 to 11
.....	1 to 26
.....	1 to 40

Now how absurd to give infants farinaceous food; arrow-root,  
 tapioca, and the like; when we give only one part of nourishment

in 26. Such diet is like putting leeches on a child, making it pale and bloodless. A child, up to its seventh year, should have nothing beyond bread, milk, water, sugar, light butter, and fat, and fresh meat for its dinner, with a little well cooked vegetable and the ripest fruit. Oats are the best food for breakfast. Children should not have beer, for not only is it a strong liquor, but there is much trash made here. Apples and oranges are food for neither children nor a child to be "good." Artificially art secures children with sweet and vitiated craving. Children and young women eat chalk, but do so, but because it is a habit of children like plain sugar or treacle. Porridge, it does not hurt their teeth. Look at the gentlemen and ladies of color down south! Have they not got teeth of the soundest and whitest. Mr. RICHARDSON tells us of tribes among the Arabs of Sahara, whose beautiful teeth he lauds, that they are in the habit of keeping about them a stick of sugar which they bring out from time to time for a pinch, and use the snuff box for a pinch. Plain sugar, when used with care, does not hurt the teeth and stomach, in moderation; but sugar, when used with care, or chalk, or verdigris, or any other substance, will hurt the teeth and hearing.

As for children of a larger size, the best diet, in the best fashion, all we can say is—there is no such thing as a good diet. First think of it—first comes a rich diet, then fish made indigestible by more cayenne; next meat with all the spices; next wine, next beer, next pie crust and the productions of a second course; next celery, cheese and oil, next wine, oranges and almonds, and lastly olives and more wine—and they

In other words, they have digged with their teeth,  
 out of their graves. The hotel that gives the  
 the richest cooking, is sure to carry  
 always overtakes these asylums  
 and, and a rich tavern  
 as great a curiosity  
 or beef, with  
 except amongst

healthy food bene-  
 is by all  
 the more it  
 who has watched  
 heels over head  
 nature demands  
 worked in all its parts,  
 work, vigorous and well  
 pin a child down in  
 road cloth, and subject it to the laws of quiet politeness. - Let  
 nature have her way, children will be high spirited, hand-  
 some and intelligent. Send them to school, let the  
 boys, how very improper!  
 dame, *very* improper.  
 instance, she allows boys  
 areas, if she had the  
 permit one sex to each  
 boys and girls together  
 monsters, and be timid,  
 The English women  
 magnificent forms and  
 by constant exercise in  
 girls walking, running, skipping  
 or duty keeps them in doors, making  
 sickly, but nature is allowed to have her  
 way, and she sends her disciples with all the graces at her com-  
 mand.

How, dear reader, do you suppose the wife of one of the *honorable* citizens, in Toronto, obtained her famous charming complexion? Do you think she bathed in it perpetually, or by walking in it, or by having it folded before her, as if it were a shawl? No, I suppose she has used the most common and the most worsted birds, or has had her complexion washed with has been brought to her by the wind, or by the plenty of exercise she has taken, or by the plenty of carriage riding she has done, or by her walking with her husband, or by her frequent visits to the park. She is, without doubt, the most beautiful woman of her example in the city, and her example is the best that can be followed for the best results.

"But you are *supposed* to have dined on your dinner. And now *WAIT ON APPETITE*, AND

Toronto, February, 1860.

P. S.—Those who follow the *written*, will never be troubled by *these* who follow no rules *these* a few hints for their guidance.

When you enter a sick chamber, *face* as long as your *there is life there is* and endeavour to raise *and cheerful conversation* the sick chamber, and *the sick man's presence* silent thunder. If the room *if the weather be not too cold, the* you may cheat the doctor out of a *also; never mind them, but remember your* friend. Of



or do anything to depress his spirits,  
 and laughter, let him have sunshine  
 and it the most nutritious  
 time, carry him fresh  
 of sight and smell,  
 something pleasanter  
 eyes upon. Let  
 the room, but  
 kept cool, light,  
 for the day  
 cases frequently  
 fresh wholesome  
 consequence of  
 on talk of religion

he is d—d for-  
 of the Lord,—how  
 chastiseth us only  
 with arguments read  
 deliver your views in a  
 . Don't preach at  
 you want to kill him.  
 several days in the  
 at the earthy part of  
 world, and is now  
 Above all things,  
 shells, don't bury  
 city. Take the  
 and do not let it  
 fellow citizens.  
 ed in a cemetery,  
 crops, or that he  
 roots or potatoes !

Plato on

