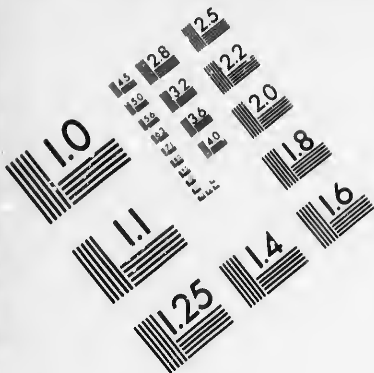

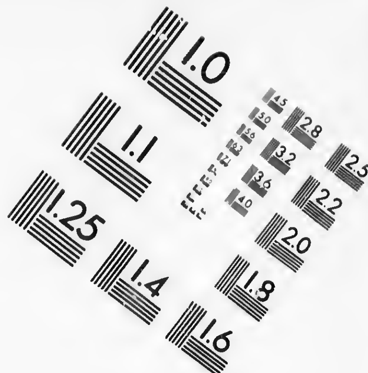

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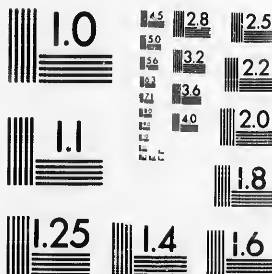

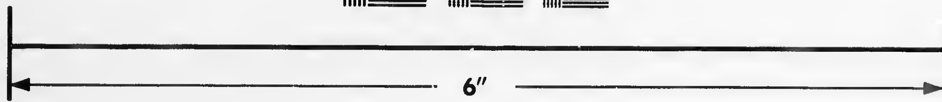

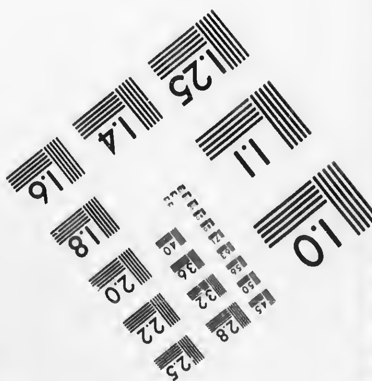

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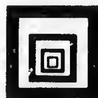

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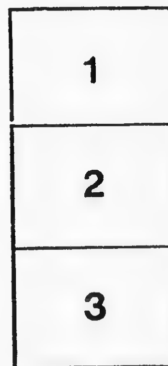

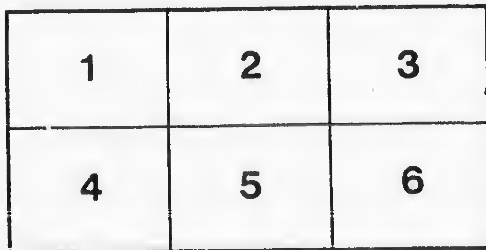

"HOW TO BUILD,"

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HOW TO BUILD.

MR. CHAIRMAN, LADIES AND GENTLEMEN,

If any of you have come here to-night, with the expectation of witnessing any displays of rhetoric; or listening to any eloquent utterances of lofty sentiments, you will most surely be disappointed; for my subject is but a practical every day one, demanding practical every day treatment, and affording but little scope for florid phraseology. Any attempt to indulge in soaring flights of imagination in connection with such ponderous elements as "bricks and mortar" would be quite as unsuccessful as the Israelitish attempt to make bricks without straw.

If, on the other hand, any have come here to-night, with the hope of being furnished with an infallible and complete recipe, for the performance of one of the most complex operations incidental to human labor: if any expect in the short space of one hour, to be fully indoctrinated into the mysteries of the "whole art of Building," they also had better nip their hopes in the bud; for the utmost which can be accomplished on an occasion like the present, is to denote the cardinal principles which should govern your operations when about to Build. Or, as it were to broadly map a chart by which inexperienced mariners, on seas so proverbially dangerous, may avoid the Scyllas, without fear of falling foul of Charybdis.

I dare say the thought has often crossed your minds,—how singular it is that MAN, the "Lord of Creation," as he pompously delights in styling himself, should seemingly be such a slighted exception to the rest of his Creator's Terrestrial works. That he to whom his Maker hath delegated "dominion over the fish of the sea, over the fowl of the air, and over every living and creeping thing that moveth upon the face of the earth," should hold his tenure of rule under circumstances so disadvantageous, compared with these of his subjects. The wild beasts of the forest are provided by nature with a shaggy protection from the weather;

even the fish of the sea are carefully adapted in constitution to their surrounding element ; but MAN, and it appears MAN alone, has received from Dame Nature but a step-mother's care, and wailingly cries, "Naked came I into the world."

He seems even to be ungifted like the Bee, the Beaver, the Ant, or the Swallow, with unerring and controlling mechanical instincts ; and it is not until he has received that *something* termed education, that he seems to have, as a piquant writer hath expressed it, "sense enough to go in when it rains."

Obliged then to provide himself not only with clothing for his person, but also with more efficient and stable shelter from warring and adverse elements, he has brought his single gift of reason into action and succeeded after repeated efforts and long practice, in elimmating certain principles concerning the world of matter, and acquiring a certain dexterity in their application which we term the "Art of Building."

The desire to possess a "local habitation" appears to be common to all tribes of men but the Ishmaelites, "whose hands are against every man, whilst every man's hands are against them." From the Laplander in his snow hut, the Indian in his wigwam of boughs and skins, the Peasant in his clay built cot, to the Citizen in his mansion, or the Prince in his palace, all are impressed by the same desire.

How then shall he gratify this desire? in what degree, and by what means, is to be the subject for this evening's discourse.

I presume that the audience which I am addressing to-night is principally composed of those who have been the original pioneers of civilization, those under whose sturdy strokes the howling wilderness has disappeared, and who have struggled with all the difficulties incidental to early settlers, but to overcome them, and are now surrounded by fruitful fields, and can, as it were, "sit down under their own vines and figtrees." To that branch of the subject which more particularly relates to their wants shall my attention then be directed.

Let us suppose that until now you made shift with the old log shanty, and are at present prepared to erect a more capacious and durable homestead ; and then, by way of preliminary, let us glance at the feelings that should direct your actions.

An old writer remarks: "Every man's proper mansion house and home, being the theatre of his hospitality, the seat of self-fruition, the comfortablest part of his own life, the noblest of his sonne's inheritance, a kind of private princedom, nay, to the possessors thereof, an epitome of the whole world, may well deserve, by these attributes, according to the degree of the master, to be decently and delightfully adorned."

Ruskin, the author of the Seven Lamps of Architecture thus touches on the point: "I would have, then, our ordinary dwelling built to be lovely, as rich and full of pleasantness as may be, within and without, with what degree of likeness to each other in style and manner I will say presently under another head, but at at all events, with such differences as might suit and express each man's character and occupation, and partly his history.

"I cannot but think it an evil sign of a people when their houses are built to last for one generation only. There is a sanctity in a good man's house, which cannot be renewed in every tenement that rises on its ruins,

"I say that if men lived like men indeed, their houses would be temples, temples which we should hardly dare to injure, and which it would make us holy to be permitted to live, and there must be a strange dissolution of natural affection, a strange unthankfulness for a[illegible] that homes have given or parents have taught, a strange consciousness that we have been unfaithful to our father's honor, or that our lives are such as would make our dwellings sacred to our children, when each man would fain build to himself, and build for the little revolution of his own life only. And I look on those pitiful concretions of lime and clay which spring up in mildewed forwardness out of the kneaded fields about our capital, upon these thin, tottering, foundationless shells of splinter[illegible] and imitated stone, upon these gloomy rows of for[illegible]nteness, alike without difference and without fe[illegible]itary as similar, not merely with the careles[illegible]d eye, not merely with sorrow for a[illegible] but with a painful foreboding that t[illegible] greatness must be deeply canke[illegible]stuck in their native ground, th[illegible]honored dwellings are the signs o[illegible] spirit of popular discontent, that t[illegible] every man's aim is to be in som[illegible] his natural one, and every m[illegible] scorn; and when men build in h[illegible]y have built, and live in the hope o[illegible] they have lived, when the comfort, t[illegible] home have ceased to be felt, and [illegible] a restless and strug[illegible] po[illegible] Arab or the Gipsey by their less [illegible] r of hea-

ven; and less happy choice of their spot of earth; by their sacrifice of liberty without gain of rest, and of stability without luxury of change.

"It is no mere question of ocular delight, it is no question of intellectual pride, or of cultivated and critical fancy, how, and with what aspect of durability and completeness, the domestic buildings of a nation shall be raised. It is one of those moral duties, not more, with impunity to be neglected, because the perception of them depends on a finely toned and balanced conscientiousness, to build our dwellings with care, and patience, and fondness, and diligent completion, and with a view to their duration at least for such a period as in the ordinary course of national revolutions, might be supposed likely to extend to the entire alteration and direction of local interests."

I have thus indulged in a somewhat lenghty extract from an eloquent writer, because of the fine, the beautiful, the noble sentiments it contains, and which are well worthy of being pondered by those who are about to build. Ere entering into practical details, I will crave your indulgence for one other, on the same subject.

Dr. Dwight, in his "Travels in New England," thus discourses on the moral effect of good houses: "There is a kind of symmetry in the thought, feelings, and efforts of the human mind. Its taste, intelligence, affections, and conduct are so intimately related, that no preconcertion can prevent them from being mutual causes and effects. The first thing powerfully operated on, and its turn proportionately operative is the taste. The perception of beauty and deformity, of refinement and grossness, of decency and vulgarity, of propriety and indecorum, is the first thing which influences a man to attempt an escape from a brutish, grovelling character, a character in which morality is chilled and absolutely frozen. In most persons this perception is awakened by what may be called the exteriors of society, particularly by the mode of building. Uncouth, mean, ragged, dirty houses, constituting the body of any Town, will be regularly accompanied by coarse, grovelling manners. The dress, the furniture, the equipage, the mode of living, and the manners, will all correspond with the appearance of the buildings, and will universally be in every such case of a vulgar and debased nature. On the inhabitants of such a Town it will be difficult, if not impossible, to work a conviction that intelligence is either necessary or useful. Generally they will regard both science and learning only with contempt. Of morals, except in the coarsest form, and that which has the least influence on the heart, they will scarcely have any apprehensions. The rights enforced by Municipal law they will be compelled to respect, and the corresponding duties they may be necessitated to perform, but

the rights and obligations which lie beyond the reach of magistracy, in which the chief duties of morality are found, and from which the chief enjoyments of society spring, will scarcely gain even their passing notice. They may pay their debts, but will neglect everything of value in the education of their children.

"The very fact that men see good houses built around them, will, more than almost anything else, awaken in them a sense of superiority in those by which such houses are inhabited. The same sense is derived in the same manner, from handsomer dress, furniture, and equipage. The sense of beauty is necessarily accompanied by a perception of the superiority which it possesses over deformity, and is instinctively felt to confer this superiority on all who can call it their own, over those who cannot. This I apprehend is the manner in which coarse society is first started towards improvement; for no objects but those which are sensible can make any impression on coarse minds. On these grounds I predicted to my friends in this town a speedy change for the better in its appearance, and in the character and manners of its inhabitants. I have seen this prediction extensively fulfilled."

Thus you will see a moral responsibility is incurred by him who is about to build. His act will either for good or evil have an influence which he would do well to look to. The question of "How to Build" becomes of vital importance, and, as just quoted from Ruskin, "no mere question of occular delight or intellectual pride" any longer, but a matter for which a man is really as answerable to society and to posterity, as he is for his everyday conduct.

The means of building, then, become a talent to be improved, and wo! to him who binds it up in a napkin.

I can scarcely imagine a man whom the judgments of Heaven are more likely to visit, even in this world, than he, who possessed of sufficient wealth miserly hoards it, or usuriously lends it, whilst his family is rising around him in compulsory coarseness; in the utter abnegation of all the delicacies and amenities of life, caused by a cramped, overcrowded, and inconvenient habitation. I have seen such cases, where daughters, perhaps some of them fast verging towards womanhood; sons, perhaps, in the impressive and observant stage of boyhood, slept in rooms, or closets rather, separated from that occupied by vitiated, debased, and obscene day labourers, by a partition so thin that every sound was audible. What can such neglect not justify? Is it any wonder that the sin of the Father becomes a visitation on the Children; that the impressive youth becomes pre-

cecious in wickedness, and brings perhaps at last the gray hairs in sorrow to the grave? I tell you there is more in this question than it is generally credited with! A decent dwelling place bears about the same relation to morality, that cleanliness does to godliness.

One more digression and I will lay me down to the regular task. I know of no other art, not even Medicine excepted, which is subjected to so much quackery, and suffers so severely from inordinate conceit, as Building. No matter whether your amateur can tell a Jack-plane from a Stone-hammer, or a Brick-bat from a Batten door, he can "build." Aye!! and that better too than almost any man he knows. He is quite confident that an Angelo or a Barry was lost in him. Though he would shrink from the thought of undertaking the construction of a cart wheel, and would not equal his talents to the stuffing of a horse collar, he will repel with indignation the least insinuation of his inability to build a house.

When we meet some poor wretch making himself the victim of his crude medicinal theories; daily dosing himself with martyrizing "Elixirs," "Cordials," "Restorators," "Ready Reliefs," &c., we pity him, and privately express a decided opinion that he "lacks a penny of his proper change." If we catch him trying the same process on others simple as himself, we are apt to frown him down. But, if either your friend "Jones," who has measured tape all his life; or your chum "Smith," a devotee to "deeds" and "dowers," who consumes the midnight oil over Coke-upon-Littleton, should suddenly take a freak, and elect himself "Engineer in Chief" to a block of stones, or kindly condescend, perhaps, to undertake a bridge for a grateful Municipality, you never dream of questioning his perfect sanity; you feel no indignation, and express no surprise, unless at his being a "clever fellow," and henceforth you give him credit for "knowing a thing or two."

But to our subject. To the prudent man, who proposes to build, the Scripture caution comes with impressive significance: "For which of you intending to build, sitteth not down first, and counteth the cost, whether he have sufficient to finish it? Lest haply when he hath laid the foundation stone, and is not able to finish it, all behold it, and begin to mock him, saying, this man began to build, and was not able to finish!" Although I know well that neglect of this caution is not likely to be a fault of yours, still I would ad-

vise you further. Leave the facilities which modern financiering affords to the speculating men who build cities, and do you only build out of the abundance of your own means. It may inconvenience you a little to do so, but it is the best plan, and saves much anxiety. Remember, as poor Richard says, "He that goes a borrowing, goes a sorrowing."

A mortgage is one of the most expensive decorations which can be added to a mansion. "Fools," says the old proverb, "build houses, and wise men live in them." Neglect of these maxims has caused many a fine "laid scheme" of domestic happiness to "gang aft agee." Better for you to let another winter's frost ameliorate your broad acres; let another balmy spring usher in the hopeful "seed time;" let another summer pass over with its ripening sun; let another golden harvest garner your grains, rather than subject yourself to those anxieties and cares without number, which are the invariable attendants of borrowed capital.

But if your old log shanty is rotting fast, or your clapboard tenement showing signs of decay, and your means have not yet quite approached the high water mark, there is no absolute necessity for delay.

Go to work with what *you* have; not to *complete* something less than what you need, but to *commence* a portion of what you desire. This is the way most of the mansions of England are built. Hundreds of years in some instances elapsed between their commencement and completion. So with their Cathedrals too. Remember "Rome was not built in a day." St. Paul's took the best part of a lifetime to build. St Peter's still longer. So there's no valid reason why *one* year should see the beginning and ending of your operations.

If you cannot do more, put up a good kitchen, and a bedroom or two, the first year; and next year add to it; next year add to that again, and keep adding, till at last you accomplish the whole, and are able to lay the cap stone with rejoicing.

It is as difficult to decide upon any single arbitrary *form* after which to erect your edifice as it is for a clothier to produce a coat pattern which will fit every body.

So long as men differ in tastes, occupations, and conditions, so long will their dwellings be greatly diversified in form. And it is right that it should be so. There is nothing which gives a thriving settlement such a barren, doleful

aspect as uniformity in this particular; when the houses are each the counterpart of another, all seeming as if they were the product of some architectural epidemic. Avoid if you can too closely following popular fashions; strive to give your domicile a character of its own, peculiar to none other, an individuality in fact, some feature or another to stamp it with the impress of your own mind. Take good care that it expresses its purposes; that no one shall doubt for a moment but what it is a house; that it shall not be confounded with the Barn, nor mistaken for a Meeting house.

Avoid that too popular error of building upon the road, or very near to it, in order to save land and be convenient. Rise above such paltry considerations, and respect yourself and your privacy; let not contiguity to a public thoroughfare expose the sanctity of your domestic arrangements to the prying eyes of every passing stranger. Better to plant your castle in the centre of your own domain than make it an appendange to a highway. A Farmer should look upon his lot as an independent empire of his own; a place neither to be disturbed or governed by exterior influences.

Make your house and its surroundings a paramount consideration, and be careful to devote the very finest acre of the whole hundred to it.

Choose the most felicitous aspect, and set it down so that it enjoys it fully. No matter whether it is due north and south, or how near parallel it is to the public road. There is no particular necessity for staring towards it; it is nothing more than your way to market and church, so there's no need to make a basilisk of it.

Avoid also taking any slavish imitation of Town houses for your model. Though many of them look excellently well in a street, they would make but gawky farm houses. They are too apt to look, as a witty author expresses it, "as if they had strayed out of Town for an airing," and harmonize as little with rural scenery, as would a foppish dandy in broadcloth and satin, at a ploughtail. And as you are not building on a pinched-up Town Lot, take plenty of room: surely out of one or two hundred acres, you can spare enough for this purpose. Do not therefore burrow in the ground further than you need, to secure a cool larder; never think of such a thing as a cellar kitchen, or anything of the sort, but stretch out sideways above ground for all the room you want. For the same reason you should avoid mounting upwards very far; stairs are at best but

great nuisances: lesser evils for surmounting greater ones; and it is very questionable whether in a moderate-sized country house their room is not better than their company. If your family is not very large, content yourself with a one story cottage, and in any case do not go beyond the "story and a half" or "two stories;" avoid anything beyond that as you would a miniature imitation of the Tower of Babel.

Our summer suns are scorching, and our winter winds are biting, therefore you will want the protection of a verandah; it should, to be worth anything, be a broad one,—not less than ten feet in width. Let it surround at least two sides of your house, a third, or even a fourth, if you will. It not only keeps the walls dry, but greatly tends to moderate the effect of extreme temperatures. There is no necessity for affecting any fine gimcrackery about it; a few plain chamfered posts, placed symmetrically, perhaps in pairs, or else with their inter-spaces latticed, with alternate openings, are worth all the half-inch filagree and scroll work decoration in the world. The prettiest thing I ever saw of the sort, was ingeniously put together of cedar branches; it reflected more credit on the proprietor's good taste, than the combined masterpiece of forty carpenters.

Do not make its roof, as is so frequently done, of bent lath board stripes, giving it a resemblance to the bottom of a mud scow; but use the decent, decorous shingle, and laid in a bed of mortar; unless indeed you can afford some of the metals, or slate. It is even questionable whether the old split and shaved Canadian shingle, when carefully mortar bedded, and then treated with a preservative coating such as coal tar, is not superior to any other covering in use, save lead. It is vastly preferable to either Tin, Zinc, or galvanized iron; for the rapid oxydization of those metals under exposure, soon destroys them. Slates too, or at least the specimens we get in this locality, do not seem to withstand the effects of extreme frost. Being very porous, they imbibe much moisture during our rapid thaws, and then, first frost, they begin to scale off and crack.

A very fashionable vulgarity, which I would enjoin on you to avoid, is the use of that detestable "Paris green" on your verandah roofs, although it generally is deemed rather *fine*. FINE!! There is not a leaf that flutters in its vicinity, not even a blade of grass near it, but what for color can shame it out of all countenance. In a city street it may here and there do very well, where the arid waste of white walls, lettered signs, and gilt shop fronts oppresses the

eye, making relief desirable as an oasis in the desert; but in the conntry, where it is the predominnting color, where nature revels in the display of it, in every variety of tint and shade, each so fresh and so mellow, the use of such harsh and raw pigments as common painters provide is nothirg short of barbarity. It is like gilding refined gold, or painting the lily.

I never behold a house patched here with vivid green, and there with a streak or two of excruciating red, but I think of the railway signals "caution" and "danger" which they are used to indicate.

Be very careful indeed how you use bright colors of any sort, they are difficult to manage, none but a master can do it with good effect. Your safest course is to deal in semitones,—neutral tints, such as light drabs, there you can never go astray. You need not fear of falling imto Quakeiism if you but work things right. Nature, if you desire it, will furnish embellishments enough. The Balsam, the Cedar, the Hemlock, the Fir, all offer you an unfading evergreen superior to the best "Paris." The deciduous varieties will every spring and summer, without the aid of a brush, deck out your home in a manner which the Queen of the Fairies might envy.

Train over your verandah and up the blank spaces of your walls, the Virginia creeper, or American ivy, as it is termed, and then in the Autumn look out for color,—scarlet, such as was never excelled in Tyre. Have you not the Maple, too, with its brilliant dyes? not to catalogue hosts of others; and still how many rush to the paltry paint pot for effect. If you only use the natural features around you, your dwelling may be "arranged" as "Solomon in all his glory was not" and that too without your "toiling" or your wife "spinning" for it.

Whilst touching on the subject of color, I may as well notice another prevalent error, viz., the almost constant use of dead, staring, unmitigated white,—a sort of finish which recommends itself to many people by the aspect of bran newness it gives to an edifice. Its real effect on the eye is to kill nearly all perception of form, it is almost impossible to get anything like shadow on such a surface. Thus you lose by its use two great elements of the beautiful, and only gain the idea of a freshened sepulchre. Such a tint in any mass can never harmonise with a landscape. Try it if you will. Take a painting, and stick a white piece of paper,

cut into the form of a house upon it, in any appropriate situation, and then stand back and look at it. Now what do you see? Nothing but the white! the white alone! Trees, rocks, figures, foliage, water, all are lost in it. So with the living landscape; a single "twenty by thirty" cottage, painted white, will ruin your enjoyment of it for miles. A good anecdote relating to this effect is told of Turner, the celebrated artist.

In his younger days, and ere he had launched from his quiet, early style of painting in grays, into those brilliant chromatic passages which so signalised his latter style, he had prepared for the Academy Exhibition, an exquisite sketch of Thames scenery. To his mortification, he found that the Hanging Committee had placed his picture not only high up, but close beside that of a brother artist, noted for his strong, crude, colouring. Poor Turner's picture stood no chance whatever; the glare of its neighbor's attracted all eyes away from it. It looked in comparison with its flaring neighbor, like a dull sepia drawing. Friends condoled, and rivals laughed, but he, however, made no remark. On "varnishing day," an occasion when painters are allowed finally to re-touch, before the admission of the public, Turner made his appearance in the Gallery, and set vigorously to work. In the corner of the picture next his adversary's, he "laid in" in distemper the Peri-winkle steamboat, with shiny black funnels, vermillion steam-pipes, and to crown all, a tremendous cloud of escaping steam, painted with the most intense white his palette could command. The effect was magical; the "Peri winkle" in her turn became the observed of all observers. Her glories outshone her rival, as far as the rival had eclipsed the first quiet sketch. Nothing but a glaring mass of escaping steam blowing off could be seen for yards around. The revenge was complete. Of course, when the Exhibition closed, and his purpose was served with the steamboat, the sponge erased it, leaving the sketch in all its orignal beauty.

When you paint the interior of your house, do not on newly fixed joinery, lay more than two coats. Woodwork will always shrink after every planing, no matter how dry it has previously been. Never attempt any *finish* until this has taken place. I think the system of artificial "graining" as a decoration at present so much in vogue, is not in the best taste. The natural grain of most woods when deepened by a slight stain is so much superior to painters handiwork, that I would generally prefer varnish in place of paint for interior decoration.

In regard to the material to be used for building, much will depend on the natural resources of the locality. Avoid if possible, the use of wood, unless in subordinate positions. Let the walls, at least, be of more durable material. Brick, if good, is excellent, but stone is better; it is nature's own material; the "everlasting hills" are reared of it. If your neighborhood contains no quarry from which you can derive squared stone, perhaps your fields may yield a crop of Boulders. For a farm-house I do not consider them a whit inferior; most of them, granitic in composition, are consequently more enduring, and less porous than limestone or freestone. If they will not make so smooth a wall, or even tinted a surface as the native rock, what matter? Your dwelling will be all the more picturesque. Listen to Ruskin:

"The sums which we waste in polishing and chiselling stones, which wonld have been better left as they came from the quarry, would often raise a building a story higher.

"It is impossible that there ever should be majesty in a cottage built of brick; but there is a marked element of sublimity in the irregular pilihg of the rocky walls, of the mountain cottages of walls, Cumberland and Scotland.

"There is also a magnificence in the natural cleavage of the stone, to which the art must indeed be great that pretends to be equivalent; and a stern expression of brotherhood with the mountain heart from which it has been rent, ill exchanged for a glistering obedience to the rule and measure of men."

Whatever material you use, you will find one precaution necessary, viz: to leave a space for the circulation of air between the outer and inner surfaces of your walls. If you build of wood, this will occur as a matter of course; but if you build of either brick or stone, be sure to provide such an interspace by "battening" as it is technically termed.

What is generally termed the "sweatiug" of walls, does not arise from the oozing of exterior damps through their substance, but from the rapid condueting properties of the material, causing a depletion of heat from the interior, which again extracting a portion of caloric from the enclosed atmosphere, thereby condenses its vapour of suspension upon the walls.

This is effectively prevented by placing a strata of such slow-conducting matter as air between them, thereby preventing the temperature of the outer walls from influencing that of the inner plastering. The correctness of the principle may be readily exemplified by examining a window on a cold day, when the atmosphere of your house is charged

with vapour from cooking or otherwise. The glass, although one of the least porous substances with which we are acquainted, will nevertheless stream down with water, whereas, on the same day, the windows of an uninhabited dwelling, wherein no such vapor is afloat, will remain perfectly clear, shewing conclusively that the dampness complained of originates within and not without, that it is not inherent in walls of stone any more than those of brick.

I have already said that you should be careful so to build your house that it will not be mistaken for anything else but a house. To do this properly, you must consider what are the distinguishing characteristics of such an edifice. The most prominent features which belong almost exclusively to a human habitation are the chimneys. They alone betoken the warm, the hospitable hearth, the cheerful fireside. Do not then stint them in dimensions or number, but rear them up on high as if you took a proper pride in them.—Never perch on your shingles, one of those miserable pimples termed a stove-pipe chimney, looking like a *fungus*,—expressive of nothing in the world but close-fisted meanness, miserly, pinching inhospitality.—Another highly distinctive feature of such edifices as Churches, Schoolhouses, Barns, is unity of mass,—one large object, betokening one particular use or purpose, not, as a house should be, a unity of several bodies or masses, betokening variety of purpose. A House can not, with advantage, be inclosed within four square walls. The kitchen, at least, should be a separate mass, else the noise and the fumes attendant upon cooking and other domestic operations will pervade the whole establishment. In summer, too, coolness demands the banishment of the cooking stove beyond the limits of the main building. There are a variety of other reasons too, for departing from the simple parallelogram form,—quietness, privacy, convenience, generally demand it.—The windows, too, are one of the most expressive features pertaining to a dwelling, and bear to it the same relation that the eyes do to the human countenance. When large and few in nnmber they betoken spacions, fine apartments; when high, lofty ceilings; when short, squat rooms; and when numerous, small, and varied, they denote a house much cut up and subdivided.—The roof and its cornibe is another expressive feature, which may be compared, in its turn to the brow;—when it has but little projection, a building has an inane, silly look; when incumbered with heavy, bulky mouldings, in unrelieved masses, it gives a frowning, lowering, forbidding, stupid, aspect. Both extremes should be avoided. Do not be afraid of

good projection, however. In the cornice it is the bulk which gives the heavy look. Let your roof run well over your walls. it not only gives a building an aspect of sheltered cozyness, but is greatly conducive to real comfort.—A porch is also an excellent and expressive feature. It betokens warmth, comfort. privacy, and bespeaks the abode of the civilived man, perhaps in as plain terms as any other part of it.

Another important consideration, and one that in the country especially, has received too little attention from house builders, is ventilation :—the provision for the supply of pure, and the escape of vitiated air. It is true that the evil influences of an impure atmosphere are less likely to affect the inhabitants of the country, who live so much in the open air, than the denizens of Towns, who are necessarily confined so much indoors ; but, nevertheless, there is still danger enough to become serious cause of concern. Eight hours out of the twenty-four, at least, are usually spent in doors, even in the country, and during our long winter season, much more than that, in rooms too, wherein no provision for a change of air exists but what is due to the deficiencies of the carpenter, or the casual opening and shutting of doors.

Scientific men inform us, that Atmospheric air is composed of three gasses in a state of combination, Oxygen, Nitrogen, and Carbonic acid gas, in the relative proportions of 20 of the first to 80 of the second, and a very small quantity of the latter. The first of these gases alone is the supporter of life, the second seems to exist for the purpose of dilution, being in itself incapable of sustaining animal existence. Now, the act of breathing changes these proportions so much that Oxygen, the vital principle, is reduced from 20 to six per cent, whilst the amount of poisonous element, or Carbonic acid gas, is greatly increased, thus so rapidly changing the constituent properties of the atmosphere, that but very few repetitions would render it, instead of a health giving element, one of the most powerful poisons in existence. Every respiration we make consumes about 20 cubic inches of air, which, allowing 20 respirations per minute, will vitiate 400 cubic inches, or nearly $\frac{1}{4}$ of a cubic foot per minute. Add to this, if you will, the quantities of air consumed in supporting the combustion of an ordinary fire, calculated at some 3,000 or 4,000 cubic inches per minute. also the quantity of oxygen consumed in supporting the flame of the lights, also, the amount decomposed by coming in contact with heated stove plates, and you will

soon gain an idea of the rapid deterioration of air in close apartments under the most usual circumstances of life.—Doubtless most of you have experienced its effects, in a more tangible manner than that of philosophical deduction. You have perhaps entered a Railway car at midnight, on some of our great lines, when every seat has been crowded, and have felt the close sickening sensation, and the consequent quickened breathing which resulted on your first entry. The crowded court, the meeting room, the office, the school room, in fact every place in which human beings are wont to congregate, offer illustrations of this fact.

It would be well if the effects of vitiated air were confined to mere personal inconvenience alone. The marked difference between the inhabitants of the town and those of the country, is the result of its action,—its effects on the latter can readily be traced in their relaxed muscle and sallow paleness of skin. In the evidence taken before the House of Commons, on the health of Towns, in the year 1840, the medical witness stated that scrofulous diseases were the common result of bad ventilation, and that, in the case of silk weevers, who pass their lives in a more close and confined air than any other class of persons, their children are particularly subject to scrofula and the softening of the bones.

Dr. Arnott stated that an individual, the offspring of persons successively living in bad air, will have a constitution decidedly different from that of a man who is born of a race that has inhabited the country for a long time; and that the race would, to a certain extent, continue degenerating.

But although the effects of inefficient ventilation are most felt in Cities and Towns, let not the denizens of the country fancy themselves unconcerned in the question. In your Schoolrooms, your Churches, yonr public buildings, you are as likely, to suffer as they, for such edifices with you are more limited in dimensions, and consequently contain smaller volumes of pure air to meet extraordinary demands. In large rooms with lofty ceilings, but little inconvenience is experienced, for the immense quantity of air inclosed acts as a reservoir upon which an assembly may for some time draw with impunity; but in more confined spaces, and with low ceilings, the small quantity of air is speedily vitiated. If any of you wish to ascertain its deleterious effects in even private apartments, let him re-enter his close bedroom in the morning, some half an hour or so after rising and taking a walk in the fresh morning air, and

he will be astonished at the close mephitic odour which he will experience.

I think I am not far wrong in attributing most of that paleness, that want of color which so distinguishes the Canadian born from the old country man, to habitual dwelling in close stove heated apartments during our long and severe winters. I think it is even more attributable to this cause than the dryness of climate, so much blamed for it.

No ordinary living room should be without a fireplace, even if a fire is never made there. Bedrooms, especially, should have one at least, if not two, communications with the external air,—this is the very *minimum* of ventilation consistent with a due regard to health. But you will do wise to provide even more than this. You cannot keep sending foul air out of your dwellings, without introducing, in some manner or another, more air to fill its place. Nature abhors a vacuum. It is quite certain that if air cannot get in very little will go out.

So in this as in other matters, you must begin at the beginning. Provide first for its ingress and then you will have but little difficulty about its egress, But though a hole in the floor, or in the side of your house, or a pane wanting in the window, are very simple and direct modes of introducing *pure* air, they are not altogether conducive to health or comfort in other respects.

Something less direct in influence must be devised a means of changing the temperature of the wintry winds, must be discovered ere we allow them to enter our habitations;—a system of quarantine, in fact, must be established.

But how is it to be done? How can we manage in a house of 12 or 13 apartments, to introduce fresh warm air into each, and take it out again when used, without an extraordinarily complicated and troublesome system of machinery.

It can, however, be done,—it is daily being done, and that, too, very simply. Let us suppose ourselves going to work to do it. We first commence by making "lungs," or a large duct, or long box, under the Hall floor, with one end opening at the West or North West side of the house, and the other opening into the Hall floor, in a position as near the centre, and not particularly in the way, as possible. This dnct, for an ordinary farm house, must have an internal area of some 4 feet or so, measured across, it must be air-tight along its whole length, and be closed with a venetian blind at the outer extremity which will allow air to enter, but keep rain, snow, and vermin out. Over the mouth

of this opening in the floor, we then set an admirable little machine, contrived by Mr Ruttan, of Cobourg, a sort of compound stove or heater, which will warm all the air that enters, to any moderate temperature desired, and usher it into your house in just such quantities as you please. The mechine is simple, and easily managed, and not liable to get out of order, and the cost is about the same as that of any other common stove of the same weight. Having now your Hall full of nice pure warm air, just come through the heater, and along the duct from the outside, the rest is easy. You have but to make openings in the partitions, over the doors into the rooms, and the air will pass into them without further compulsion, provided you give it a chance of getting out again somewhere else. If there is a fire place in the room the operation will be complete. If there is not, you must provide communication with some flue or another, whence it will escape in sufficient quantities,—for remember, that if you cannot *empty* a room of air, you cannot more than *fill* it:—you cannot send a particle of fresh air *in*, if there is not a way to let the old air *out*, and you can only send it in, as fast as you let it out, no faster.

For public, and even for the more elaborate class of private buildings, Mr Ruttan provides more efficient, though more expensive and complicated means. The air is sometimes introduced into the living rooms through concealed openings in the ornamental cornices, and then sent through perforated metal skirting, under the floor, to communicate its remaining heat to it before finally passing into the escape flues.

Amongst the numerous plans for accomplishing the purposes of heating and ventilation, I know of none comparable in simplicity, efficiency, and cheapness, to his. There is no man who inhabits a house who is too poor to use it, for he has also a contrivance which converts even a cooking stove into a ventilating agent. And even the Heater will in one season nearly save its own cost by economising fuel. No one should think of building in the present day without attending to ventilation. The ordinary fireplace, though infinitely preferable to the common stove, and excellent in its way, still is a very imperfect affair. It heats one side of your body wonderfully well, and both if you keep turning. Your back will be in a Frigid zone whilst your feet are in the Torrid. Torrents of cold air, required to keep up the draft, rush in with chilling force in all directions, every crack and cranny emits its blast with dire rheumatic effects. A great improvement may be effected in regard to

these drafts, by contriving an opening near the fireplace itself, from which sufficient air to support combustion can be drawn, without its traversing the apartment.

As to the Architectural Style which you shall adopt in building your house, it is a pure matter of taste; but still, like all such matters, subject to some exceptional regulations. I need scarcely tell you that a wooden edifice should not be in the castellated style, nor should fortified architecture of any sort decorate a man's home in a peaceful country. And so with some other types. The Greek Temple, although an excellent device for Pagan worship in southern climes, is but an execrable example for imitation in a Christian's dwelling. Yet still how often do we meet, in thickly old settled countries, the New England States for instance, with glaring inconsistencies of this kind, perpetrated under the idea of "fancy" and "taste."

We sometimes find a retired soap-boiler enjoying his dignity and ease in an exact copy of the Ionic Temple on the Illissus, executed in the best pitch pine, instead of pentelic marble,—and further decorated with the goodwife's pots and pans, drying amid the intercolumniations of the portico.

Fashionable merchants in large Cities sell their wares under friezes snatched from the Temple of Minerva:—the Elgin marbles have plaster of Paris counterparts in some Beer shops of pretensions.

But of late the rage for "Greek" has somewhat abated, and the relics of Feudal Britain are coming into vogue.

Clapboard Castles on 20 feet banks, command imaginery passes of peaceful turnpike. Towers and Donjon keep are raised of lath and plaster, striped to *resemble* stonewerk:—battlements are of sound inch boards:—machiolations of papier machie, and so on with all the rest of fictitious nonsense "according." Even the Cathedrals have been *done* on a scale of one inch to a foot.

But although imitation has thus to often run into ridiculous riot, it is no reason why men shall not indulge in reminiscenses of their native land whilst building their dwellings.

The crow-stepped gables, and the towering "lums" sending forth reminiscences of "Auld Reekie," are fitly associated with the rugged brawny forms of "Caledonia's stern and wild" undaunted sons.

The quaint, many-gabled, and verge-boarded English cottage, with its cozy, honey-suckled porch, is an appropriate "setting" for the burly "Southron," with his mug of

"home-brewed" and a cloud-compelling pipe.

There is an exquisite "keeping" in all these things when they do not 'oerstep the modesty of nature" which is truly delightful.

Imitate them if you will, work out your old memories if you can, but be careful you do not caricature. Take heed that while indulging in the music of your long left home, you "sing with the spirit and the understanding also."

I have thus sketchingly discoursed, in a sort of "off and on" fashion, of matters pertaining to building, seizing at what came uppermost, and following after what seemed needful, untramelled the while by any formalities, and now it is about time to close.

There is but one other light in which I would present the subject to your minds,—that of memory and endurance.

As we estimate our Forefathers by their works, so will posterity in its turn judge of ours. It needs not the enclosed newspaper or the engrossed parchment under our foundation stones to transmit on characteristics to future ages. They may indeed tell who lived, who reigned, and who served, they may inform future antiquarians whether it was Thomas Jones or John Thomas; but our vital characteristics are engraven with surer hands.

Not a stroke does a workman strike, not a stone does he pile on another, unfraught or unladen with the impress of his age. And has it not ever been so? Have not the tangled tropical forests of America yielded to the hands of a Squire, and a Catherwood, from under rank, masses of living foliage, evidences incontrovertible of a mighty race, passed away, leaving no record but the witnessing power of their stupendous works.

From buried Pompeii we are daily disentombing material evidences of former civilization, regarding which written history was but vague and unsatisfactory. From the far away climes of burning India, accounts of gigantic Rock-hewn Temples reach us, declaring the pre-existence of a race, possessing almost superhuman power and energy.—From abundance of sources, evidence may be gathered, that from man's handiwork is his character best learnt, and by it is the record, most enduringly perpetuated.

The very existence of either Homer or Ossian may be clouded with doubt, the ages in which they lived may be surrounded with darkness, for they were periods of war, not work. Not so with other. Pericles and his reign will never be forgotten or questioned, the monuments are still existing. It is even so, as the "Oxford Graduate" says :—

"The day is coming when we shall confess that we have learned more of Greece, out of the crumbled fragments of her sculpture than even from her sweet-singers or her soldier historians."

In this light then, does not the question become of importance "How to Build?"

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