The Dwelling-House of the Twentieth Century

By Otis T. Mason

A HOUSE is a suit of clothes for a number of persons, shielding them from observation and protecting them against extremes of temperature. It affords to the biped mammal a refuge, and in its improvement and sanitation is to be found the most important cause of the wonderful lengthening of human life within the last few generations. Mortality figures seem to prove that we live at least a decade longer than did our ancestors one hundred years ago, and it is safe to predict that our descendants, one hundred years hence, will surpass ourselves in this respect—thanks in no small degree to beneficial changes in the construction and management of the dwellings they occupy.

The average white citizen of Philadelphia or Boston lives to be fifty years old; the average Indian does not survive sixteen. Think of this fact when you hear people say that the "artificial conditions of civilization have multiplied diseases," and you will realize that such a statement is pure nonsense. On the contrary, the dwelling-house—most important of all things that go to make up a civilization—is, in its highest development, a disease-proof fortress and a conserver of life. No feature of nineteenth-century progress has been more striking than the improvement accomplished in domestic architecture and in the internal arrangements of houses; yet even now the human domicile is far from having completed the process of evolution which began ages ago with the savage shelter of boughs, and it is probable that we should be greatly surprised if, by setting the clock ahead, we were able to step to-day into a typical residence—the dwelling, that is to say, of a man of moderate means—of the year 1950.

To begin with, let us survey this twentieth-century house from the outside, in front. It is a modest yet dignified structure bearing no likeness to other residences in the same block. Indeed—if one may judge from a multitude of examples afforded by neighboring streets—the mid-century is an epoch of individualism in domestic architecture. Dwellings are no longer put up in solid blocks, all exactly alike outside and inside—a style most popular in the latter part of the nineteenth century—and the party-wall is rarely used. Each house stands alone, mainly because, in the year 1950, people have come to realize that the lumping together of buildings renders them less attractive to the eye and deprives them in large degree of their power to express the individuality of their owners.

DRAWN BY B. MARTIN JUSTICE

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Stairs Replaced by Automatic Elevators

Suppose that we enter the dwelling with a view to ascertaining what novelties, structural and in respect to equipment, it has to exhibit. The abolishment of stairs has been made practicable by the introduction of a pair of small elevators, which, being perfectly automatic, require no attendant. They are run by electricity, noiselessly, and any one who wishes to ascend or descend has only to call one of the cars by touching a push-button. Thus summoned, it glides swiftly to the floor where it is wanted; the passenger gets aboard, and a touch applied to a numbered button inside causes it to pause at the story desired. Then the occupant steps out, and the vehicle is at the disposal of the next person who may need its services. Such elevators, indeed, were in use in a few rich men's houses so long ago as the end of the nineteenth century, and their general introduction at a later period in place of staircases is attributable chiefly to the cheapening of electricity.

Fifty years ago it was not realized that all the electricity required for the largest city could easily be obtained from the water-power of the river flowing by. To-day (A. D. 1950) it all seems so obvious that we marvel how the problem could have escaped solution by our intelligent ancestors. They failed to see the way out, however, whereas we, having produced electrical power in this manner at a small fraction of its former cost, distribute it underground everywhere, so that it furnishes all the light, heat and power needed for a great population. Every dwelling-house of moderate pretentions nowadays is filled with a network of copper wires, concealed by mouldings and decorations, which carry a current for illuminating the establishment, warming it, and running the domestic machinery.

The luxury of a perfectly warmed house, kept always at exactly the proper temperature, was unknown to the people of fifty years ago. In 1900 a dwelling, in winter, was either too hot or too cold most of the time, and to maintain the air of a single room at the correct degree of Fahrenheit for more than a few minutes together was almost out of the question. How uncomfortable it must have been, and how strange it seems from our viewpoint of the present day, when we have only to set the automatic governor of the heating apparatus at seventy-two degrees, let us say, and the temperature of the whole establishment is maintained at that point for months together. If the weather grows colder more electricity will flow in, and this in a proportion so nicely regulated that the thermometer within does not rise or fall by so much as a quarter of a degree. Supposing it to be desired, one room may be kept at a different temperature from another—the bed-chambers cooler than the drawing-rooms, for example.

Houses Cooled by Liquid Air

In 1900 no means were known for cooling the air of houses save by fans, and in hot weather the healthy languished, while the sick and feeble died. How differently things are managed in this mid-century epoch, when a residence without cooling apparatus for use in summer would be considered as incomplete as if it lacked heating arrangements for winter, the one being as much a matter of course as the other. In the twentieth-century mansion we find liquid air employed for this purpose, and here again the mechanism is perfectly automatic, the outflow of the substance being so controlled by a governor that the temperature is kept always at the same point. The receptacles containing the liquid air are hidden in the ceilings of the rooms, the fluid descending as it is liberated.

The dwelling of the twentieth century is lighted, of course, by electricity, but the light-bulbs are not exposed to view, as was formerly the case, and thus a great improvement has been made. Obviously, it is much better to conceal the sources of illumination, avoiding dazzle, and to diffuse the light by the help of reflecting surfaces, so that a warm and cheerful glow is distributed, rather than to have one part of a room extremely bright and the rest in relative darkness. More important, however, is the contrivance by which the light, under control of an automatic governor, turns itself on in exactly the degree that may be needed to keep the apartment at the requisite point of illumination. The fading of the daylight turns on the electricity, and vice versa. Indeed, one may fix the lighting of a house for a year ahead.

Damp House Cellars a Thing of the Past

Five elements go to make up a dwelling, no matter how gorgeous and elaborate the establishment may be, or how humble. They are, first, the cooking-place; second, the eating-place; third, the sleeping-place; fourth, the place for chatting and amusement; fifth, the storage-place. A Vanderbilt palace or an Eskimo hut is equally divisible into these parts, and we find them all, of course, in the house of the twentieth century. As for storage, one finds no cellar beneath the mansion of 1950, this subterranean room having been done away with for sanitary and other reasons. Electricity having rendered a stock of fuel unnecessary, and no furnace or other heating apparatus being required underground, the *raison d'être* of the cellar has vanished. The fashion of keeping food supplies in the family pit went out long ago, and now the housewife buys her groceries in insect-proof packages, putting them away on shelves, while her provisions go into a cold-storage compartment chilled by liquid air.

The twentieth-century house, instead of being sunk in the ground, is uplifted above it, and in this way a number of advantages are gained. To begin with, it is insulated by this means to a considerable extent, both electrically and as to temperature, so that there is less difficulty in regulating the heating, cooling and lighting of the mansion. Secondly, ventilation is assisted by a clear sweep of air beneath the dwelling; and, thirdly, the arrangement helps to make the establishment rat-proof and bug-proof. No properly constructed residence in 1950 is infested by roaches and mice, as all houses were to a greater or less extent fifty years ago—that is, in 1900.

How people managed to endure such vermin is beyond imagining, but the fact seems to be that they regarded the nuisance as unavoidable. While nominally keeping cats to destroy mice, they did in reality, had they but known it, keep the mice for the benefit of the cats.

Nothing in this wonderful dwelling, for the sake of visiting which we have jumped to the year 1950, is more remarkable than the cooking-place. It is different from the nineteenth-century kitchen in nearly every respect, the most striking point about it being its absolute cleanliness. In 1900 the kitchen was necessarily the dirty part of a house, owing chiefly to coal that blackened everything, ashes that made things untidy, and smoke that coated walls and ceiling. To-day, in the culinary department of the twentieth-century mansion, there is no smoke, no coal, no ashes, no smell, and no fire to inflame the face and the temper of the cook. No time is lost in kindling fires, and there is no waste of fuel in starting them and in keeping them up when they are not wanted. When a meal is to be prepared the current is turned on by a twist of a button, and immediately the electric range is ready for service. Incidentally, it may be mentioned that the sadirons employed for ironing in the laundry are made hot simply by attaching them to a wire, and, being kept at a constant temperature by the electric current, they never scorch the clothes. Then, too, they are always clean and bright. In a corner a little motor attends to the business of beating eggs.

One does not find in 1950 that ingenious automata have taken the place of domestic servants, as some imaginative persons long ago suggested might happen, and it seems unlikely that a machine will ever wait on the table satisfactorily. It is not apparent that many changes have been accomplished during the first half of the twentieth century in the eating department of the house; but, thanks to the new and perfect cleanliness of the kitchen, the latter has been brought into closer relations with the mid-century dining-room, and thus has come about an odd sort of reversion to primitive habits. Of this perhaps the first suggestion was given by the introduction of the chafing-dish into the dining-room—an instrument resembling in its mode of use the pot from which the appetite of the savage is gratified direct. However, it is not implied that the utensil in question is less satisfactory on this account, and nowadays we have the electric chafing-dish, which is attachable to a wire at a moment's notice by a plug-switch. Electricity has been substituted for the alcohol lamp in making tea, and dishes on the table are kept hot by a current conveyed through the cloth from copper plates beneath.

Not a battery is to be found in the twentieth-century dwelling here described. The electricity used in the establishment comes in a single current through a heavy wire from a distributing station, and on the premises is split up as required for heating, for lighting, for cooking, for running the elevators, and so on. The dumbwaiter runs by electricity, as well as the housewife's sewing machine, and the same fluid both runs and regulates all the clocks in the house. It works the automatic piano, and might be made to agitate the baby's cradle, only that people in 1950 have learned to know that infants are apt to be rendered stupid, or even idiotic, by rocking them. If the daughter of the house wants to crimp her hair, she fastens her curling-iron with a little plug to a convenient wire, and enjoys a certainty that the instrument will not scorch her curls.

Twentieth-Century Furniture

It is a marvelous convenience, the running of all the business of a dwelling by an invisible fluid furnished from without and convertible into power, light or heat as desired. The Genie summoned by Aladdin was less strong and far less clever; besides, he did only odd jobs, and took no contract by the year. Electricity has the obvious advantage of coolness when used for lights in summer, but of much more importance is the safety of its employment with reference to fires. In 1950 houses are rarely burned—not only on this account, but also because

the furniture is of fireproof wood, and the floors, doors and wainscoting are fireproof likewise. Here, indeed, is one of the most notable improvements accomplished in the architecture of the twentieth century. In the nineteenth century people did not build their residences of unbaked mud, because they knew that, if so constructed, they would tumble down; but they did not hesitate to compose them of lively combustibles, ignoring the fact that they were likely to burn up.

The household furniture of 1950 is slighter than that of fifty years ago, though much more metal is utilized in its construction. In fact, during the last hundred years the idea has steadily gained ground that a dwelling should first afford space for its inmates, and that the furnishing should be considered as of subordinate importance. How queer the ancient four-post bedsteads, massive wardrobes and chests of drawers look nowadays! It must have been very uncomfortable to live with them. To-day we make our chairs, tables, beds and bureaus as light in weight as possible, consistently with strength, so that they may be easily moved, and they are not allowed to take up more room than is necessary. Of domestic appliances and conveniences there are many, of course, which were unknown in 1900. To attempt a catalogue of them is scarce worth while, but mention suggests itself of the photographs in natural colors which, since the discovery of the simple secret of that long-sought art, have lent at small expense such beauty to the walls of houses.

People must rise to a certain degree in the scale of civilization before they are able to grasp the idea of property in land—a conception not entertained by the primitive savage. Later comes the notion of property in water, illustrated by the holding of irrigation rights. With both of these forms of property our ancestors were familiar as far back as 1900, but it had never occurred to them that there could be such a thing as a property right in air, though there was a germ of its recognition in their laws for the abatement of nuisances. They said that ownership in a square foot of land extended downward to the centre of the earth; nowadays we say that it extends upward into space for an indefinite distance. In the twentieth century we regard smoke or waste air turned out above our premises as an infringement and a cause of action for trespass.

In the study of a house one must consider the street in front, which is to the dwelling what the river is to the city—a carrier of the traffic upon which it depends. The anthropologist tells us that the primitive street is a trail made by the tramp of human feet and widened to a path. Houses are set up along it, and it becomes a village thoroughfare. The rest is easy; but one must realize that the street of 1950 is very different from the street of the nineteenth century. There is now no dust, mainly because there are no horses in the towns. Other modes of transportation vastly superior and safer have replaced vehicles drawn by horses, and with the departure of those banished animals many evils have disappeared. For example, there are no longer many houseflies, which breed almost exclusively in street filth, and certain infectious diseases long suspected of propagation by those insects are much less common than formerly.

Bricks and Wall-Papers Out of Date

No wall-papers are used in the typical dwelling of the twentieth century here described. In fact, they have ceased to be employed in the houses of the well-to-do, largely because they assist the accumulation of dirt and disease-germs. Sensible people in 1950 prefer walls that may be scrubbed and kept clean, and it is not considered that the handsomest papers are comparable in a decorative sense to modern art-frescoing and other methods of treatment now practiced. The substitution of artificial for natural wood in floors has been a very notable improvement, the counterfeit having all the smoothness and elasticity of real wood. It has the advantage of being fireproof, and, having no cracks, does not afford hiding-places for dust and insects. There is no respect in which the twentieth-century mansion has improved upon the nineteenth-century house more markedly than in cleanliness. It has come to be realized that cleanliness is not only a source of satisfaction in itself, but the best possible defense against the physical ills which threaten the human body.

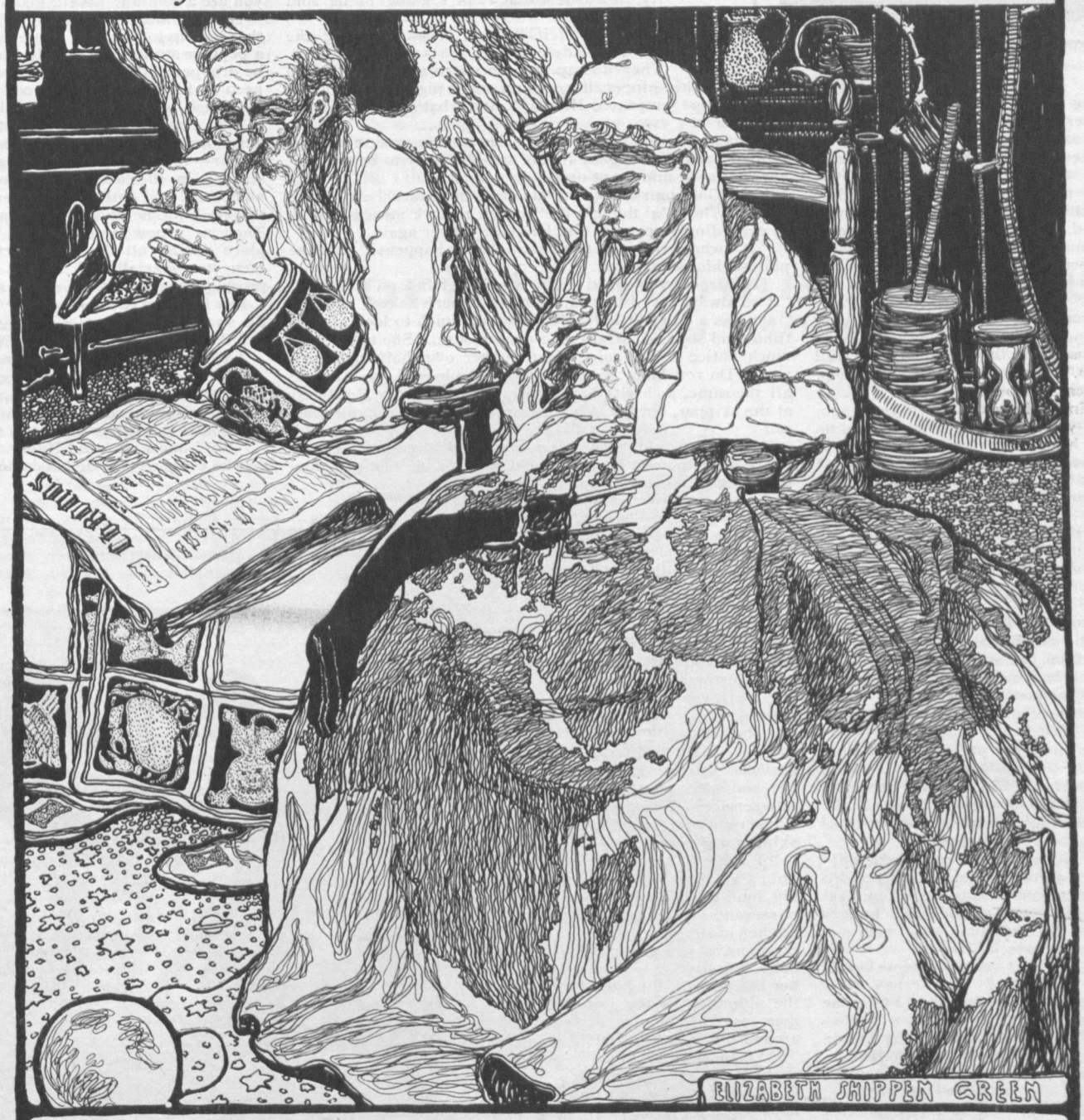
In 1950 nearly all dwellings, save those of the very poor, are built of artifical stone, which is preferred to the natural because it is better for the purpose, as well as cheaper. Brick, which is a species of artificial stone, has gone out of employment almost entirely. The experts who first made a scientific study of this subject found that there were certain specific properties which a building-stone, whether imitation or natural, ought to possess. For one thing, it ought to be porous, so as to afford a dead-air space to serve as a non-conductor. They declared that an ideal material of this kind was furnished by the tertiary lava from beneath which the famous Calaveras skull is said to have been dug out, and it is a fact that the best artificial stone utilized for building in 1950 closely resembles the volcanic tufa referred to. Being silicious, it is extremely durable—an essential point, of course.

The invention of artificial stone is one of enormous importance, inasmuch as over a large part of this country there is no rock suitable for building. This is true, for example, of all the eastern edge of the United States, from Northern New Jersey to Florida, and it applies likewise to the Gulf States and to the Mississippi Valley as far north as Cairo, Illinois. In the Cotton Belt of the South there is not even stuff for tombstones. Happily, however, Nature has provided plenty of material that is convertible into stone—a supply so vast, indeed, that we may build all of our cities out of it for centuries to come without diminishing it perceptibly. We dissolve flint to get silica, and combine the latter with soda in a liquid which we pour over sand, cementing the particles together. Such mixtures of silica are the great cements employed in Nature. In fact, it may be said that the processes used in the manufacture of artificial stones are the same as those followed by Nature herself. So far back as 1900 imitation sandstone was produced in immense quantities, while artificial marble was even then made by subjecting ordinary chalk first to a bath of mineral oxide to give it color, and then to the action of a silicate solution, the result being a substance indistinguishable from real marble and capable of an exquisite polish. The advantages which this ability to duplicate on the spot the processes of Nature confers are so much a matter of our daily life that we rarely stop to reckon them, or value their importance.

A judicious person, writing in 1900, must hesitate to attempt any serious prediction as to modifications in the building and equipment of dwellings which will be accomplished by the middle of the next century. There are ventured here only a few guesses as to what changes may come to pass. It will remain for a future generation to discover how far these surmises are accurate, though, of course, a good many people who have already arrived at adult age will survive long enough to live in and enjoy the luxuries and the improvements of the houses of A. D. 1950.

A Spendthrift

By Carolyn Wells



THE year was departing—the very last day
Of the month of December was passing away—
When old Mother Earth, with a slight quake of fear,
Said: "Father Time, please, could you spare me a year?"
"Zounds, Madam!" cried Time; "another year? No!
Where's the one that I gave you a twelvemonth ago?"
"I spent it," replied Mother Earth, looking down;
"You did?" thundered Time with a menacing frown;
"Then give an account; if wisely 'twas spent,
And none of it wasted, perhaps I'll relent."

"I spent it as usual," confessed Mother Earth,
"In the pursuit of happiness, pleasure and mirth."
"What have you to show for it?" Father Time said.
"Alas, I have nothing;" and Earth hung her head;
"But if you will give me a new year to-night,
I'll make earnest resolves to spend it aright."
Time reached for his wallet and took out a year,
Saying: "Those resolutions are worn out, I fear;
But it's growing quite late, so take this, and run;"
And he gave Mother Earth 1901.