

CHRISTMAS AS A SCIENCE



NO PAINT TO LICK
IN THESE latter days, when every branch of human activity has been systematized and we are brought, whether we like it or not, under the spell of scientific management of the smallest business, what is more natural than that we should now be obliged to accept the scientific management of Christmas?

Christmas as a science! How our grandfathers would have gasped at the idea! In their time Christmas was a spontaneous holiday. Christmas eve they hung their stockings on the mantelpiece in full confidence that Santa Claus could find his way through a six-inch stovepipe. Then there was the Christmas tree, with a grandfather to distribute the gifts and a strong force of uncles and aunts to maintain peace among the cousins. And there was skating in the afternoon with the choicest sort of melée to give the finishing touch to the day.

There was no need of science there; it would, in fact, have spoiled the whole thing. But now the spirit of Christmas has changed. We still have our Christmas trees, subject to the regulations of the fire department, but we are really slaves of our Christmas shopping list. From Thanksgiving to Christmas most of us live in an atmosphere of deepening gloom. We have continually hanging over us that dreadful prospect of what would be the best thing to give So-and-so, and when we have made a selection our hearts sink at the awful thought that, perhaps, What's-his-name may give the same thing.

It is to relieve this situation as much as possible that science has been called in to our aid. Of course, even science has not yet been able to prevent two people from sending the same gift to one person. But it has been able to display unusual gifts and a larger number of them for our consideration, so that it will be easier to select a present which we may be quite sure another person would not think of. And the greatest advantage of scientific Christmas shopping is the increased speed with which the ordeal may be gone through.

There are two things which have brought about this result. The first is the establishment of exhibits of gifts for children in the schools of the large cities of the country. The second is the scientific arrangement of gifts for sale in the "hops and department stores. On one floor we have a department devoted entirely to toys and other gifts for children; in another place presents particularly suited to men; and elsewhere sections for women and boys and girls. It is all the direct result of the card index and the filing cabinet. You look under the particular heading you wish and you find displayed before you a vast quantity of suitable gifts to choose from.

The object of the school exhibits is not so much to save mothers labor, worthy object though that might be. Nor is it to display the latest and most ingenious products of the toy market. Child welfare is the primary purpose, and there we have another side of the scientific Christmas. It is to save the children from being deluged at the Christmas season with inartistic, unhygienic and useless gifts. Aesthetic and hygienic are words that look up larger in the vocabulary of the present than that of the past.

And so, although Noah's ark will remain Noah's ark to the end of the world, no twentieth century youngster whose family attends one of these exhibits will feel constrained to suck the paint off Shem, Ham or Japhet. For, lo and behold, they are entirely innocent of the familiar red and green and blue of that unsanitary century and have left behind. The sons of the patriarch and all the animals that "went in two by two" are of reasonably hygienic white wood.

By the same token, dolls will be dolls. For here again the scientific Christmas has produced a change to a more esthetic and hygienic product. Instead of the big rag doll, whose features have been kissed into obliteration by several generations of children, there is a stockinet successor, equally unbreakable, far more beautiful, and absolutely impervious to washing.

For older children we find marvelous all-round dolls, again embodying the three important virtues. They are unbreakable, washable and artistic. Their naturalness is evident at a glance, and the visitor is not surprised to learn that they are reproductions of American children modeled by American artists.

And yet, the thought rises, will modern Dorothys and Nancys love these charming creations one whit more than their mothers and grandmothers loved the china and wax dollies who preceded them? There was Henrietta, a gorgeous Parisian, you may remember, whose pink and white loveliness is still a happy memory. Poor Henrietta! She died the victim of a bad small brother who tried the effect of midsummer heat upon her waxen complexion. Then there was Juliet, she of real brown hair that combed and a warm brunette complexion, and a host of others who may have had untold attractions. But you must put them out of your mind in this scientific age. Real hair harbors horrible microbes and complexions do not digest well in small stomachs.

Then there are other suggestions which are the result of the practicality of our time. Housekeeping furnishings, for example, such as tea sets in pewter, cooking utensils in granite and metal, an ironing board and iron which can really be used, and an iron cookstove upon which things can be cooked. In the matter of musical toys, science has gone even further. The pianos for the child of today are marvelous instruments. Alas for the prestige of the tinkly toy of a generation gone by! These have from two to three octaves of the chromatic scale and are accurately tuned "to



EVEN THE FARTHERS AGE SCIENTISTS

cents in cost. It is surprising how many attractive things may be had for this money, and the hard-pressed, busy mother, doting grandma, conscientious aunt or inexperienced big cousin is very likely to find there the very thing to buy for Tommy or Ruth.

The scientific Christmas has only begun and before long we will have exhibits for people of all ages and both sexes. As it is, the department stores, by their scientific arrangement and the catalogues and lists of suitable gifts, classified according to ages, have done much toward making even shopping for men a simple matter.

This, however, is a very recent institution. In the old days, a woman went to the large shop, without the slightest idea of what she wanted to buy, and after ten minutes in the crowded, heated aisles, surrounded by thousands of elaborate, alluring, gayly colored possibilities with no apparent order or arrangement, bewilderment and no decision was her portion. Under such conditions, even the most conscientious of them seized the article nearest. She was at the mercy of the saleswoman because she did not know what she had better get or where she could get it.

But the woman's bewilderment was nothing to the man's. He didn't even make an attempt to shop; he simply bought. But all these things are different now. You get a list of things which such-and-such a store has to offer for man, woman and child of any given age, with the floor on which it may be found indicated, and you have only to walk in calmly and deliberately and purchase it. It is literally an index of the peace and good will which you may wish to dispense. You do all your thinking beforehand and have an opportunity to remember that Mrs. So-and-so's library is furnished in red, and that a Kaiser Sinn vase would be more acceptable than a lamp.

Then when you have made your selection you may make your way to the store with a fairly calm and tranquil mind. Of course, it is crowded with a density which makes progress almost impossible, blazing hot with multitudinous lights and noisy with many clamoring voices, but all that can have no effect on you. You are a scientific shopper and know just what you are going to get and where you are going to get it. Science saves time, money and nerves.

There is another way in which Christmas has become a science and that is in the methods which the big shopkeeper employs to attract the crowds of holiday shoppers. Go into one of their establishments and you cannot fail to see it. They are aglow with light, bright with the colors of unnumbered fabrics and you hear far and near the clash of music from many instruments. That is simply to lure you in and once you are there you see at first nothing but a spectacle of confusion and a conflict of sounds that would make Babel lose caste as a synonym. But if you start to buy what you have come for you will find a remarkable state of order so far as the things offered for sale are concerned. It is not really a store; it's an exposition.

There isn't a man in the world who has a keener understanding of the human makeup than the big shopkeeper. He knows every string of the instrument and plays diligently upon them all. He lures people with advertisements which are wonder stories. He halts the passing crowd in the streets with a windowful of Christmas wax-works, and once they have come inside, whether with a purpose or out of mere curiosity, the machinery is there to hold them fast.

For weeks the designers, decorators, scene painters, dummymakers have been at work devising and constructing some sort of living pictures fraught with the spirit of the Christmas tale. There is the papier-mache church, still and beautiful, with snow-covered trees about it, light shining from the tall windows, men, women and children mounting to the portal, and from away in the inside sanctuary somewhere come the music of a mighty organ and voices singing Christmas carols.

It is expensive, but it impresses the people who enter the store. It is the idea of it all that the hearts of the shoppers are melted and the spirit is moved to buy more and still more for the holiday giving. That may seem a little "far-fetched" as you sit at home with a "grouch on" because something went wrong yesterday, or a man you thought was your friend went back on you, but get into one of those stores, where "you can't hear yourself think" of your troubles for the noise, and you will realize that it is really a very clever conception.

en. Six only stepped up and did the right thing—two women and four men. Analyzing these figures, we have 50 per cent of honesty among women to a bit over 30 per cent among men. Is that, in your opinion, about the average or wasn't the test decisive?"—Kansas City Star.

Walking Graveyards.
Some of the Indian princes have given fifty to sixty lakhs of rupees apiece—over \$2,000,000 apiece—to Great Britain for the war. Beside

Up there before the eyes is an inspiring presentment of the great Unselfishness. And here before you, behind you and on either hand are the goods, just the things for all your kith and kin. It is the shopkeeper's plan that you shall buy while the spell is still on you, while the dim religious light beams out and the Christmas carols burden the air. And you do. You would be less than human if you didn't. You may not think that has anything to do with it, but it has. The shopkeeper would not go to all that expense, you may be sure, if he did not know what results it would bring him.

Even the small street fakers use their wits to sell all they can during the holidays. It is their harvest time of the whole year. And they select the spots on the sidewalks which will be most advantageous for sale of their particular wares. They invent innumerable little devices for the purpose of attracting crowds. They, too, are scientific.

The toyman chooses a spot where the greatest number of children will pass, and spends the day showing the workings of his clock-work vehicles with metallic horses and drivers, his fighting roosters and climbing monkeys, and his automatic animals full of plaintive voice. About the corners where most people pass are stationed the familiar men and women with baby rabbits and beribboned puppies of divers breeds. They know just how to make a woman imbued with the Christmas spirit take pity on the little animals on a cold day and buy them in order that they may have a comfortable home.

The Christmas greens man with his huge boxes of holly and mistletoe, and—more power and less glucose to him—the candy man and something like ten thousand others display their wares from all sides, entice the passing throngs with a hundred little devices, appeal to their sympathy and turn peace and good will into hard cash. To both buyer and seller, from the biggest to the smallest, Christmas has become a science.

From ancient days Christmas trees, lighted with candles, were used in the chancels of English churches. But it has been put on record that the introduction of the modern Christmas trees into England was due to the late duchess of Kent, grandmother to King Edward VII, who was credited with having brought the custom from Germany for the amusement of Queen Victoria when a little girl at Kensington palace.

The Christmas tree by 1846 was undoubtedly established at Windsor; indeed, at that period a perfect plantation appears to have sprung up in the drawing room of the castle. In the newspapers of the time it is recorded that after dinner, at which the principal dish was a noble baron of beef weighing 260 pounds, that occupied many hours in roasting, and at which the band of the Scots Fusiliers discoursed such popular airs as Auber's "Bronze Horse" and selections from "Norma," the queen and the prince, with the royal suite, retired to the drawing room, where, on tables, were gracefully displayed "several imitation fir trees upwards of six feet in height, from the branches of which were suspended a variety of French bonbons and numerous elegant presents for the royal visitors and suites." The trees were further learn, were brilliantly illuminated with wax tapers judiciously placed among the leaves.

It is not certain, however, that the custom had not been in use for centuries in rural parts of Great Britain.

WHEN CATTLE KNEEL IN ADORATION.
Many an awe-stricken group has waited in the chill air to see the cattle fall upon their knees in adoration at twelve o'clock, the hour when Christ was wrapped in swaddling clothes. An honest old Cornwall, England, man, who lived at St. Stephen's Downs, near Launceston, said, towards the close of the eighteenth century, that he once, with some others, made a trial of the superstition. Watching two oxen in their stalls at twelve o'clock at night on the 24th of December, they observed the two oldest oxen only to fall down upon their knees "and make a cruel moan, like Christian creatures."

There is an old print in the British museum in which the oxen in the stable near the Virgin and Child are represented upon their knees, as if in suppliant posture. This graphic representation is, perhaps, the origin of the foregoing superstitious notion.

But more curious than all is an addition to this superstition, to the effect that the brute creation unanimously refused to acknowledge the change of style, from old to new, under the calendar, though on old Christmas day not only would the oxen sing their welcome song but the oxen and asses would kneel in their stalls in token of homage. It was also said that to spin on Christmas day caused cattle to go mad and lame.

SOME PEOPLE DO.
"Did I understand you to say that Willoughby enjoys canned prunes?" asked the man who was slightly deaf.
"No," answered the friend; "I said 'canned tunes.' There's no accounting for tastes."

DIFFERENT POINT OF VIEW.
"When we were first married you used to admire my clothes, but you only frowned at them now."
"But, my dear, your father paid for the clothes you wore when we were first married."

such gifts the gifts of the London business millionaires seem small.
"In fact," said James Douglas, the liberal publicist, in an interview with an American correspondent—"in fact, the gifts of the Nizam of Hyderabad and the Maharajah of Mysore and the Gaekwar of Baroda give our English merchant princes, who owe England so much more, a look of avarice; and you know the definition of avarice."
"Avarice, like a graveyard, takes in all it can get and never gives anything back."

Fundamental Principles of Health

By ALBERT S. GRAY, M.D.
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SUNLIGHT AND INFECTIONS.

The daily newspapers recently published the following paragraph: "At a conference of the Association for the Prevention of Consumption at Leeds, England, Sir William Osler of Oxford, formerly of Johns-Hopkins university, startled the audience by the announcement that 90 per cent of all people probably have a 'small focus or area of tuberculosis.'"

The audience was "startled" by the assertion only because we habitually give very little heed to any matter that does not immediately concern us individually, or that is not forced upon us by circumstances that compel our concentrated attention. The statement has been made by Osler and by many other authorities in substantially the same words again and again in the past, but it did not "stick" at the time solely for the reason that few happened to be in a receptive mood. It is an undeniable fact that unless one is in a receptive mood the most obvious and sublime truth falls on unheeding ears, and in this fact we have a most instructive illustration of the beginning of tubercular disease in our bodies, the principle involved being identical in either case. For just as the mind must be receptive to be able to receive, to hold and to develop a truth, so must our bodies be receptive in order to receive, hold and develop tubercle bacteria, or any other bacteria. No life can possibly develop in an unfavorable environment.

It is perfectly well known among the medical profession that whatever may have been the cause of death, postmortem examinations usually show a small area where tuberculosis has existed, but that has been "cured" by nature's method of fencing about and imprisoning any invading matter she is strong enough to overwhelm. Any invading bacteria are either devoured by the white corpuscles or are fenced about and "encysted" if the organism has sufficient vitality to fight; but if there is not sufficient vitality then the individual becomes one of the 150,000 that die annually in this country from some form of tuberculosis.

We have noted that white sunlight not only develops plant life, but that it also exerts an inhibitory or restraining effect as well. This is clearly proved by the fact that certain plants are found to grow faster and taller under red and blue light than they do under white light, and that they are stunted or even killed under green or violet light.

We do not know why plants react in this way, but we have positive proof that they do. And it is equally certain that bacteria generally are either quickly killed or profoundly modified by the rays at the violet end of the spectrum. It should require no great strength of the imagination, then, to understand why we have epidemic outbreaks of pinkeye, influenza, diphtheria, sore throat, measles, scarlet fever, "colds" and the like following any profound disturbance in meteorological conditions that tend to interfere with the normal amount of pure sunlight reaching us. Because it matters not what it may be, whether it is smoke, dust from volcanoes, excess moisture condensing into clouds, colored glass, or brick walls and tin roofs, anything standing between any living thing and the sun must materially modify that life. Its vitality is in direct ratio to the amount of energy received through its normal line of connection with the sun.

We prove this with plants by growing them in dark rooms, or under colored glass, which is only a simple means for shutting out such parts of the spectrum as we desire, and also it is proved by the extent to which large areas of growing crops are infested with disease during long continued cloudy weather.

It has been conclusively proved that the sum of the work executed by the animal, and of the heat which it gives out, is exactly equivalent to the chemical potential energy taken in with its food, and this we know can be equal only to the kinetic energy of the sunlight stored up during the production of the plant.

And today our individual energy is derived quite directly from that same source. Four factors are necessary to produce any plant crop—seed, soil, moisture and direct sunlight; and the absence of any one of the last three

factors will inevitably result either in a total failure of the seed to germinate or in some abnormal development. Seed and a favorable environment result in a plant growth; and a germ, which is only a very small plant, in an organism—our bodies, for instance—is under conditions where there must result a growth which we have come to call "infection."

For the development of an infection either the germ must be very virulent, malignant or aggressive, or the organism very much enfeebled. We are fast coming to believe that the latter is generally the case.

The success of heliotherapy on tubercular invalids in the Alps and in France proves there is some action through the skin we do not yet fully understand, and it is encouraging to note that the matter is being taken up in this country.

FRESH AIR AND TUBERCULOSIS.

That there was any tuberculosis among the human race in the prehistoric days when men lived wild and rugged lives without fixed habitation in the mild climate where the species first developed is highly improbable. The disease undoubtedly had its first appearance only after men began to herd together and live a communal life; the evidence seems to prove that it tends constantly to increase progressively with our advance in material wealth and culture as the individual is more and more removed from the fundamental source of energy.

In the writings of Hippocrates, the father of medicine, who lived 460 to 359 B. C., are directions for the care of a case suggestively familiar to us, for he describes something suspiciously like modern tuberculosis, correctly interpreting it as a fever and recommending for it fresh air, change of climate and hygienic living.

From the fact that Celsus, a Roman medical writer who lived in the first century A. D., and Claudius Galen, a Greek physician and medical writer (A. D. 131 to 200), approve Hippocrates' advice in their writings, it is reasonable to assume that the prayers and incantations customary among the priests and people generally from the dawn of history were still dependent on in that day to combat the disease. Galen in his writings recognized tuberculosis to be contagious.

In general from the birth of the tribe down through the centuries when the physician was half magician and half priest, and to doubt his skill was an act of impiety, the demand has been for pure magic, and, of course, strenuous efforts have been made to supply the demand. This effort will continue until an enlightened people cease to ask the impossible. Invalids have been bled to death and dosed with poisonous elixirs of life to no avail, but the people have held steadfastly to their faith in magic.

Fresh air and hygienic living are the key which modern science holds out for the release of humanity from the bondage of tuberculosis.

Just recently I have been asked by the mother of a delicate girl if night air was safe for her to breathe. The results secured among the snow covered peaks of the Alps in cases of surgical tuberculosis of the bones furnish the answer to this question. Cases of undeniable tuberculosis have been carried to the point of treatment because the invalid was too weak to walk and heliotherapy has been tried as the last resort before the amputation that had been recommended by competent authority. In the course of a few months the victim, with the skin from head to foot tanned to the color of a piece of rare mahogany, has recovered sufficient vitality to enjoy going out in the cold, crisp air arrayed in nothing but a breechcloth and playing games in the snow. Good food, fresh air, and the general tone acquired from coming close to nature are what is responsible for the wonderful results secured in those institutions.

Very obviously the lesson to the rest of us should be that it is our individual duty to our family and the community to make such good use of this knowledge of nature's workings that we shall not become infirm and a burden. No one is immune unless he lives a rational normal life and none is so strong that he may not quickly become weak. It is in these periods of weakness that infection may seize us, to be subdued only through the regaining of vitality. But the trouble is not "cured;" it is simply latent and ready to flare up again the instant we permit our vital powers to drop below a certain point.

Loss of ambition and energy, a capricious appetite, dyspepsias of all sorts are to be viewed with suspicion, and a careful examination should be made by one competent to locate any tubercular focus one may have tucked away in some corner.

RESTORED TO MAN HIS VISION
Incident in the Work of the Anti-Suicide Department of the Salvation Army.

The Lighthouse has been battling with the problem of a vast army of the sightless. Derelicts from the alleys have poured into it. The life stories of some of these are tragic. One twilight a young foreigner sat trembling in the lamp room of the Lighthouse. His coat collar was turned up to hide his collarless, frayed shirt. He was an Englishman and a man of education. An emissary of the Lighthouse had found him in a back tenement in his last struggle, preparing for the unknown.
"You can't keep me from it," he said. "You might this time or next or next, but you can't keep it from it. I'm useless, and I don't want to live."
He was fingering a small velvet elephant which Miss Holt keeps as a memento upon her desk. She had casually handed it to him. She is fond of elephants.

HOME TOWN HELPS

TREES SCAVENGERS OF AIR

Besides, They Make Summer Cooler and Winter Warmer, Says an Authority.

There is a New York Tree Planting association and Dr. Stephen Smith is its president. Dr. Smith agrees with the poet Pope, who extolled trees which "furnish in summer shade, in winter fire." More than that, man's very life on this planet depends upon the tree, which absorbs the poisonous carbon dioxide which man exhales and in return pours into his lungs the exhilarating and vitalizing oxygen secreted by its leaves, says the Dietetic and Hygienic Gazette. The tree regulates the temperature of the air in which we live by having itself a fixed temperature of 64 degree Fahrenheit. The grateful shade of trees on a hot summer's day and the comparative warmth of the forest in the coldest winter's day is due in a degree to the arboreal temperature. Therefore, if city streets were filled with vigorous trees we should have cooler summers and warmer winters.

And on hot days the tree sprays into the air an immense amount of water—32,000 gallons for a tree of full size and leafage. Here is an inestimable cooling process. And such a tree has in foliage the equivalent of five acres of grass land—a fact further suggesting that a tree standing by our dwellings in the city and lifting its 'ollage in the air, story above story, would bring to every window which it passed acres of park scenery. In the hot summer days and nights it would purify the air entering the chamber and cool it with a delicious moisture. Finally, the tree can absorb and thus remove from the air the emanations from the street and from putrefying waste matter. In this respect trees are the scavengers of the air and protect us from "filth diseases."

It should be added that trees are valuable in that they provide homes for birds who feed on destructive insects.

HOMES FOR BRITISH WORKERS

Plans That Are in the Nature of Experiments Are Being Given Careful Consideration.

Evidently British cities do not purpose that the war shall interfere seriously with plans for housing their workmen. In Newcastle-on-Tyne, for example, plans have recently been prepared for furthering this movement. United States Consul Walter C. Hamm recently reported that two plans for the erection of workmen's houses have been considered by the housing committee of the corporation of Newcastle, and if approved by the city council will be carried out.

One scheme proposes the erection of 84 two-roomed houses, which will rent for \$1.15 per week, and 23 three-roomed houses, renting for \$1.52 per week. The second scheme proposes the erection of eight two-roomed dwellings, renting for \$1.22 per week, and eight three-roomed dwellings, renting for \$1.38 per week.

The total number of houses proposed by the two plans is 128, containing 292 rooms. The total cost is estimated at \$125,000, which includes the cost of the buildings, the street work and the rent of the land.

This plan, if realized, will be carried out under the "Housing of the working class act" of 1910, and in this case the periods of loan repayment are to be as follows: Land, 80 years; buildings, 60 years; sewerage, 30 years, and streets, 20 years. Tenders for the erection of the buildings have been invited.

Uses of Tenement Houses.

If Cleveland shall follow the suggestions contained in a tenement house code proposed by the chamber of commerce of that city, life would be far more worth the living for many people. Among other things, it provides that no room in the cellar of any tenement house shall be occupied for living purposes, and that no room in the basement of such a dwelling shall be used for any purpose other than cooking or laundry. No tenement house or any part of it would be used for lodging houses under this code. Various provisions are made for safety and health. Among them is the requirement that in rooms used for sleeping purposes 500 feet of cubic air space must be provided for every person of twelve years or more and 300 cubic feet for each person less than that age.

Trees for School Grounds.
Trees for beautifying school grounds are furnished free to rural schools in California by the Chico Normal school. Chico will also send, on request, a man to lay out school gardens in rural communities.

Cheap at Any Price.
"Really, madam, this evening coat makes an entirely different woman out of you."
"That settles it, Clara, take it—never mind the price."
Careful Management.
"My wife seldom criticizes me," said Mr. Meekton.
"Lovely disposition?"
"No. Good discipline. She's afraid that if she keeps noticing me I'll get notions of self-importance."
Curse of Too Much Beauty.
"What a beautiful girl your daughter is!"
"Yes. So beautiful that I've given up hope that she'll ever wash the dishes for me when she grows up."—Detroit Free Press.

LITTLE MATTER OF HONESTY

According to Test, Humanity Does Not Rank Very High in What Might Be Called Little Things.
"How cheap is your honesty?" asks the Wichita Beacon. "Probably you wouldn't rob a blind man or take pennies from a baby—at least we want to believe that you wouldn't. But if the man at the cigar or candy counter by mistake handed you back too much change and you saw the error, would

you call his attention to the mistake and return the excess or would you chuckle, pocket the swag and save your conscience by saying to yourself: 'Well, it was up to him?' The other day a business man gave a number of coins to the cashier and told her to give an extra coin to each of the first 25 persons getting change. She did so. Eight pocketed the change without looking. Ignorance, therefore, lets them out. But of the other 17, 11 knowingly kept money that didn't belong to them—nine men and two wom-

en. Six only stepped up and did the right thing—two women and four men. Analyzing these figures, we have 50 per cent of honesty among women to a bit over 30 per cent among men. Is that, in your opinion, about the average or wasn't the test decisive?"—Kansas City Star.

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