

## Scientific American

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**Light and Its Effects--Gothic Churches.**

How sublime is the opening chapter of the Book of Books, "God said let there be light, and the light was." Before this command went forth "the earth was without form and void," but no sooner had the gladsome holy light dawned upon the dreary gloom, than order began to assume her sway and the earth to arise in beauty. What a world of gloom this earth would be without the glorious light. No wonder the region of condemned spirits is called "a place of blackness and darkness." Without light we could have no idea of beauty. The brilliant diamond is the prince of gems. The idolater who bows to the sun exhibits next to him who worships the creator of the sun, the highest intellectual powers. Light is the nurse of the organic world. Without light the flower would not bloom, nor the meadow put on her mantle of green. And in animated nature, those animals which live in caves and in the dark places of the earth, are remarkable in their deformity. And those dark damp cellars, so numerous in Hamburg, in Europe, and New York in America, wherein dwell such a number of the human species, what are they but vaults of mortality and degradation.

Beauty, health, and pleasure cannot be separated from light. In art, the sublime and the beautiful pay homage to this truth. Well does the skilful painter know how to produce effect by throwing a mass of light upon the foreground of his picture. No wonder the "Transfiguration" is the master-piece of Raphael.

With our high civilization, it is justly to be expected that every attention would be paid to this subject, so far as it related to health, and pleasure. With respect to health, surely no one needs to be much more enlightened; but in respect to pleasure, let us indulge in a few reflections as connected with the art of church decoration—a subject of no minor importance.

In art, it is genius which unites proportion, light and shade in wedlock; without genius to do this, the architect will produce a composition based upon the anti-chromatic scale. This appears conspicuous in the interior decorations of almost all of our gothic churches. In some things we are a strange people, and in nothing more than a rivalry of fashion; Gothic architecture is fashionable and we rush into this fashion, be it appropriate or not, and like rival belles, one church endeavors to excel the other, if not in simple grandeur, at least in gaud and glitter. As beauty is arbitrary in her laws, nothing can be added or taken from them, without injury to the whole code, destroying their design and effect. Nothing but a pure taste should be consulted in interior decoration, in order that the whole parts may harmonize. That this rule has been extensively violated, we have but to enter all our most elaborately decorated wealthy gothic structures, to be convinced, and convinced painfully. The harmony of form, in some of them, may be seen, but the harmony of colors—light and shade, never. As our architecture is a borrowed art, it would be a happy thing had the pure and the chaste alone been selected. If to carry out the design of such a style of architecture, it is necessary to make the interior of such churches like the shades of Ptolemy, then the sooner they are devoted to the moles and bats, so much the better, for certainly they are not suitable for the worshippers of Him who is a "bright and a shining light,"—such places are not in harmony with the cheerful tone of worship suitable for those who expect to dwell in "the fullness of uncreated light." Some of these churches are so dark, that a stranger would require a clue to guide him down their sounding aisles. On entering one of them, it may be said, "darkness covers this place and [in respect to true taste] thick darkness the people." That many churches are rich in decoration, no one will deny, but they possess neither harmony nor chastity. If gaudy coloring, and a profusion

of abominably colored glass, are evidences of correct interior decoration, then the majority of them may be considered the finest specimens of art, but beauty must certainly be left out of the question. There is no branch of interior decoration which requires a finer taste and a greater amount of skill than the grouping of colors in stained windows. In the majority of the churches to which we refer, yellow appears to be a favorite color. Whether it is chosen for richness, as like unto gold, or for sweetness, as being similar to a thin stratum of molasses, it is not easy to determine, perhaps the latter consideration is nearest the mark. To those who have viewed some of the finest specimens of Gothic Cathedrals there cannot be the possibility of a doubt upon the question of admitting more pure light into all our gothic churches. The good effect of this would at once be appreciated by the most unsophisticated mind. The side windows should only have tastefully colored borders, and the middle all white, except under the crowns of the arches, which should be tastefully executed in colored glass harmoniously blended, so that the "Watchers on the Walls" may have "their brows with roses and with myrtle bound."

The subject of light as connected with all that concerns man, is worthy of more attention from every individual than what it receives. If there is an organ of the human frame on which the Creator has exhibited more design and expended more labor than another, it is the orb of vision, and what is it but the window of the soul through which stream fountains of light, reflected from countless forms and hues, imparting pleasure to the mind and health to the frame.

**Perspiration.**

Perspiration is an excrementitious exhalation from the body to free the blood from impurity. About five pounds of perspired matter is said to pass through the skin of a full-grown man, every twenty-four hours. There are two kinds of perspiration, sensible and insensible. The sensible constitutes visible sweating; the insensible passes off in the form of vapor, and of it we are not so conscious. When we see persons with large globules of sweat on their faces, we may be sure these have all passed through the minute pores of the body and collected on the surface—perspiration has been going on quicker than exhalation. It is dangerous for persons in such a state to expose their bodies suddenly to a cold damp atmosphere, as the pores suddenly close and perspiration is obstructed. In a cold atmosphere, when perspiration is checked, the vital heat is retained, and when perspiration is profuse, the heat of the body is discharged; hence the various quantities man perspires in warm and cold countries equalize the animal heat, and he is thus enabled to withstand the exigencies of different climates. The skin sympathizes with the lungs and other internal organs, and renders them healthy or diseased. The perspired matter is principally composed of water and carbon. It also holds in solution several salts and animal matter. The oxygen of the atmosphere combining with the carbon, forms the carbonic acid thrown off by perspiration. The glands of the skin also exude a kind of an oily substance, which gives pliancy and softness to the skin. This oily secretion is very copious in the negro, making his skin remarkable for softness, and preventing the cuticle from cracking by the powerful influence of the sun. This is the reason why the tears of the negro appears like crystals rolling over a soft sable piece of fine fur. The skin so intimately sympathizes with the lungs, bowels, &c., that when perspiration is obstructed, these organs soon become deranged and disease follows.

In warm climates copious and free perspiration is necessary for health. In some of the southern States and in tropical countries, when perspiration stops no time should be lost in making a will. Those who perspire with difficulty are not constitutionally adapted to live in a tropical climate; those who perspire freely are best adapted to live in warm latitudes. In cold climates, he who perspires the least is the most comfortable—in warm climates, the

reverse. The skin of some people is more sensitive than that of others, and in some it sympathizes so intimately with the lungs, &c., that when perspiration is obstructed only for a short time by the application of cold to the skin, they are thrown into spasms. In people of a sanguine temperament the membrane of the lungs becomes inflamed by a sudden stoppage of perspiration. In the lymphatic, the glands of the lungs are irritated, and in bilious people the stomach and bowels. This is the reason why different people are frequently attacked by diseases of different organs from obstructed perspiration. As the skin exercises such an important influence on the physical condition of every person, it is necessary to preserve it from injury, in order to preserve health. The skin should be kept perfectly clean, by being frequently washed and rubbed to remove all external obstruction to perspiration. Children should be wholly washed every day, especially before being put to bed, and then well rubbed with a dry cloth; adults also should be washed as often. It is the universal custom to wash in the morning, and not before going to bed—the latter period is decidedly the best, although the former should not be neglected. The reason of this is, that during the day the exercise consumes part of our system, which our food is designed to supply, hence the continually wearing away and re-production of the different parts of our bodies. Evening, or during sleep, is the period designed by the law of our creation for the depositing of the new solid particles to supply the place of the worn out particles. Let all the wasted matter, therefore, be washed away outside, to allow the new to form freely, aye, and to form in a more beautiful manner, for like the deposition of crystals, the particles of matter of the skin assume a smooth or coarse appearance, by the form of the extraneous particles on the outside. This is the reason why those who wash their teeth, face and hands before going to bed, have generally good teeth and fresh smooth skins. Cold sea water bathing in summer, and hot sea water bathing in winter, is good for the preservation of a healthy skin. If an internal organ be diseased, the cold bath should not be used. In such a case the hot bath relieves internal congestion by expanding the cutaneous vessels for the reception of a proper quantity of the circulating blood. The cold bath, in such a case, forces the blood from the surface upon the internal overloaded vessels, and in some cases this has caused death, the result of the malpractice of ignorant men. On leaving a heated room, persons should never expose themselves to the cold damp night air. Persons who are sweating profusely should avoid exposing themselves to a cold damp current of air as they would a cup of poison. There is, perhaps, less attention paid to this important subject than any other; this is the reason why there is so much consumption on our sea board at the east, and on the borders of our interior lakes. The condition of the skin for the promotion and maintenance of health, is something which should engage the attention of, not almost every person, but every person, for it concerns every human being on the face of the broad earth.

**New American Coins.**

Some new coins have been struck at the mint, Philadelphia, to illustrate the Bill presented by Senator Dickinson, which is now in the Committee of Finance and they are alloys for one and three cent pieces. The cent piece is designed as a substitute for the present copper coin, and contains the proportion of silver—one tenth—expressed in its legend. The effect of this infusion of precious metal, small as it is, besides lightening the color perceptibly, is to reduce greatly the bulk of the coin of that denomination, and to make it much more convenient and portable. Its weight is twenty-five grains, while that of the present cent is one hundred and sixty-eight. It has a large round hole in the centre, which extends the diameter of the piece to a proper measurement, being the same as that of the dime which is as small as could be desired for such a coin; it affords a distinctive mark, by which the piece may be recognised and safely paid out even by the touch; it affords a facility to

retailers to put the pieces up in parcels, say of hundred or thousand, by stringing them, or putting them on a wire.

The three-cent piece is an alloy of three-fourths silver and one-fourth copper, its weight twelve and three-eighths grains; its diameter just midway between the gold dollars and the half-dime. The bill provides that its devices shall be "conspicuously different from those of other silver coins;" and consequently we have a radiated liberty cap on one side, and a wreath enclosing the Roman numerals III on the reverse. It is also distinguished from the half-dime by a smooth border. It has the white appearance of pure silver. This coin is proposed as convenient adaption to the prices of many things, and to making change; but there is also a special object contemplated in relation to it. The country is weary of the worn-out Spanish money.

We cannot but hope that the abominable Spanish currency will all be thrown out of use in the course of a year or so. We hope the Bill will pass into a law as soon as possible.—There is no coin so convenient as the decimal kind, and none so barbarous as the  $\frac{1}{2}$  and  $1\frac{1}{2}$  Spanish pieces.

**Propeller Improvements.**

In our list of Patents for the week ending the 25th ult., there is the claim for one granted to Mr. P. S. Devlan, of Reading, Pa., for a new combination, and application of a hitherto lost power, to assist the propelling power. Its main feature consists, as explained to us, in a very simple arrangement of tubes running from stem to stern on each side of the vessel into which the water rushes, as it presses against the bows, and on emerging from the stern, keeps in brisk motion submerged water-wheels of large size, which are connected by cog-wheel gearing to the propellers. The invention certainly looks like a practicable one, and seems to be founded upon correct philosophical principles. We understand that it has been pronounced upon favorably by distinguished naval architects in this country and England. Mr. Devlan calculates that his improvement, properly perfected, will reduce the time of a voyage across the Atlantic nearly one half, and save also one-half the fuel now consumed in the steamers. We must wait for time to show us whether these high-wrought expectations will be realized.

We have known Mr. Devlan for some years. He has taken out a number of patents, and is now on the road to fortune. He has recently realized a handsome competency from the sale, in this country and in England, of his patent-right for the manufacture of the "Lubricating Oil," recently invented by him; and is now erecting a new building in Reading, for making the oil upon an extensive scale, to supply orders from the Reading Railroad and other Companies, which are coming in upon him to an extent sufficient to keep him busily employed for some time to come.

**Splendid Present.**

We saw last week a splendid diamond ring just sent over as a present by the Emperor of Russia to John W. Griffith, Esq., of this city, marine and naval architect, and author of the excellent work now publishing on that subject. The present was a mark of esteem for the skill and genius displayed by Mr. Griffith in a beautiful model of a ship forwarded by him to St. Petersburg. The ring had a number of huge diamonds, forming a St. George's Cross, with a splendid emerald in the middle. It is a ring of great value, and shows how the nautical genius of our countrymen is appreciated by the emperor of all the Russias.

**Patent Case--India Rubber Pontoon Boat.**

On Monday last week a case was decided before Judge Nelson, U. S. Court, this city, for an alleged infringement of patent for india rubber pontoon boats, Horace H. Day, plaintiff, Wm. Ward, defendant. The claim of the patent was for india rubber air cylinders attached to the boat and its flexible bottom, and it seems the defendant had exhibited his boat at the last Fair of the American Institute as the patent, it is said, of Goodyear. The jury found a verdict of \$469 for the plaintiff. Geo. Gifford, Esq., was counsel for plaintiff. There was a move made after the verdict in relation to damages by defendant, but it was too late.