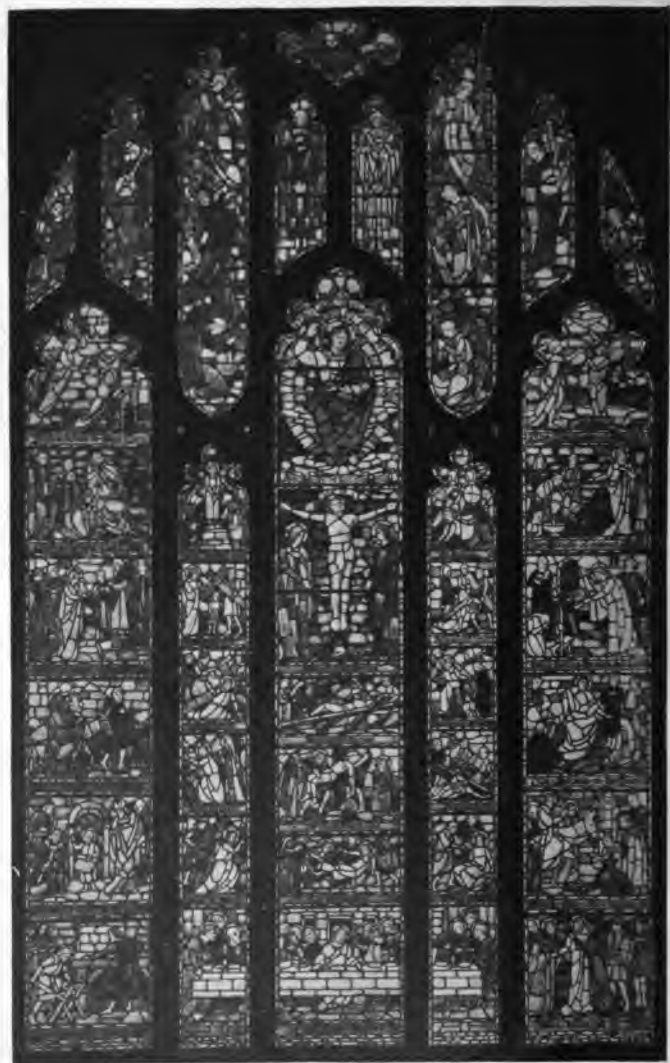

Brown Memorial, Emmanuel Church, Newport, Rhode Island
r Harry Eldredge Goodhue

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HANDICRAFT

VOL. II JULY 1903 NO. IV

STAINED GLASS

By Harry Eldredge Goodhue

So much has been written on stained glass in America, that I cannot help feeling a certain modesty in daring to add another word, yet in this publication it would seem there was room for a study of the technical side of the craft itself and a comparison of the old and new.

In this country, windows did not receive any distinguished attention until a comparatively recent date, when the school of American glass was founded. Since then, however, wonderful progress has been made, and remarkable achievements in the new material have been placed in our churches; indeed, I fancy none of the Applied Arts have attained such popularity or been put to such varied uses. Picture windows by our best artists have quickly filled new and expensive churches; houses have been darkened by richly colored designs in hall-windows and transoms; Pullman cars and hotels have been filled with it; even bar-rooms have felt the need of it, and owners of small suburban houses, built to rent, have held out, as an extra inducement to tenants, the "stained glass" door and side lights. All grades of American glass have appeared, memorial windows in churches have brought their makers fabulous prices — by far the highest ever paid for

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glass, while others (most of them, I fear) have been made at ridiculously low figures, at the expense of every worthy quality.

"Opal glass," as it is called, has become a fad with all classes, so that enormous factories are required to supply the demand. A very fair percentage of the graduates of schools of decoration have taken up glass-designing either as a profession or as a side issue. It must not be supposed that their training has adequately fitted them for it, for the occasional problems in windows for students cannot in the nature of things do more than merely interest them superficially in the opportunity. Years of apprenticeship would be required for understanding the craft sufficiently well to design intelligently for it. But with us, since windows have become pictures, designs have naturally become pictures too, and success has come to those who could compose and color well, regardless of their inability to plan and work out the leading. Since there can be no doubt of the popular success of the new medium, it may sound paradoxical to speak of it as a decline in the craft, yet such declines have come to every art when it became popularized, and to those of us who have the love of stained glass craftsmanship at heart, it must appear a decline. The evolution of glass in America has brought with it a feeling of something mural, opaque, instead of transparent. Our most honored mural painter has found his greatest successes in memorial windows, and it is to him that we owe all that is best in our productions. Others, whose feeling and qualifications

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were altogether mural, have discovered that drawing cartoons and designing for church glass was more profitable than wall-painting. A few carefully trained men have come over from England, but so tempting was the field that they quickly became engulfed in the desire to make pictures from a material not intended for pictures. Since the tendency has been to produce pictures instead of decorations, windows have been designed from the standpoint of the painter in the commonly accepted meaning of the word. The leading has been studied from the standpoint of the painter, who does not appreciate the value of hard lines, so that it has been reduced to a minimum, and hidden, wherever possible. The desire to get away from it has led to the employment of large pieces of glass, many of them too large for safety and exceedingly difficult to cut; and even when successfully gotten out by the cutter, not safe nor craftsmanlike, as a very slight jar or wind-pressure would be sufficient to break them. This fault (or shall we call it variance from the accepted methods of stained glass?) is again the mural quality which has gradually crept in, to the detriment of the craft. American glass, beautiful as it is in itself, is not fitted for the making of windows along the lines set for us by the great masters of the past. One often hears that its opacity softens the light and does away with the glare, and that the method of mixing, in a single sheet of glass, several colors from the pot, gives great variety of tone and color. This may be true, but why should we be afraid of pure color?

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The men of the twelfth, thirteenth, and fourteenth centuries were not. The working with a limited pallet of deep, luscious, transparent color was their glory. With our glass its very opacity causes it to lose one of the most precious qualities of the old glass: the light comes through, but not the sun, to fill the church with gorgeous rays — to almost echo the window upon the floor.

The surface color of opalescent glass is most objectionable. At night, when the building is lighted, the lighter glasses stick out, porcelain-like, or ugly drabs and blues streak the white opal. All day long the exterior is marred; good stone churches have been literally spoiled by the disastrous arrangement of surface-colored glass filling the windows. Should not the architect or decorator consider his work in both lights? Half our churches, for instance, have an evening service. Is it well that half of the time their decorations should be at such a disadvantage? Real glass is not colored on its surface, and when seen at night resolves itself into soft darkness, the leads alone, catching the light at the soldered joints, suggesting that it is a window.

We often hear of American "opal windows" as mosaic. They are advertised so to differentiate them from the imported painted variety, but they are not thought out and built as a mosaic is — not nearly so much so as the old French windows are. The term "mosaic" is merely used to denote a window where the detail is drawn, not with a brush, but with leading. Leading is perhaps more perverted than any other side of the craft in our day. We

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try to escape it, while during the best period a good half the effect in windows was due to it. They were loaded with leads which, with the many heavy bars, much heavier than we would use now, add the black which complements and sets off the radiant loveliness of the colored glass. We sometimes hear that the reason for so much lead in the old work is that at that time facilities were such that only small pieces of glass could be made at one time. This may or may not be so, but there would appear to be a much more fundamental reason than that: they did not wish large pieces in their windows. It was on the small bits of glass that the marvelous, gem-like appearance of the thirteenth century windows depended. In the large figures the pieces are still kept small; often the faces are cut up in a grotesque manner, not because it was really necessary from the workman's point of view, but because the artist in him felt the decorative value of having all the pieces of glass of a relative size; he felt as a designer, not a painter.

While on the subject of leading, I may cite an instance where a well-known American landscape painter was passing judgment on a "mosaic" window in process of construction. He objected greatly to the lead lines, and inquired why it was not possible, in these days of Yankee inventions, to produce a transparent cement that would hold the glass in place as well, and so do away with the heavy black lines. If this be the opinion of a good painter, what can we expect of public taste in general?

Evolution has carried us so very far that it would

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be fairer to give the American product a name to itself, and not call it stained glass, for it is absolutely different from what has been understood by the term.

The reasons why and how all this has come about are difficult to analyze. The chief and noblest cause must be the enthusiasm of the best artists who have gone into the making of windows as a profession. Not perfectly understanding the old craft, they have invented their own ways and means to arrive at their desired results. Then we must reckon the lesser men, who have not thought at all about the cause of art, but instead have taken it up merely in a commercial spirit, seeing that the public taste required something else than the windows from beyond the seas. Possibly not much can be said for the foreign work made during the infancy of our industry. Abroad, instead of progressing, the craft has been at a standstill, bound by tradition and time-honored convention, which amounts to this: wherever a piece of plain glass is found, paint something on it, whether it be a square or diamond in a simple window, or a bit of sky behind a figure. This they have done conscientiously and well. We may feel the lack of color, or breadth in design, but the result is still stained glass. Not so here, and it is not to be wondered at that, with no traditions, we should have made so many failures. Let us hope that "The Society of Arts and Crafts" may help to hurry on the time when the Artist Craftsman is to appear. With a few exceptions, our stained glass has been in the hands of artists or

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business men; the last, quick to take advantage of the demand, have supplied it by hiring the work done by the specializing system—one man to make the design, another the cartoon, still another, maybe, to paint the head and hands, and then handing the working drawings over to a factory method of production. Each separate worker is often an expert of ability, but such work can never stand like the work of a single individual.

Our windows, it is to be feared, have been made by men who have never seen or considered the buildings they were to adorn. Such must be the kindest conclusion we can hold when entering so many of our churches. How many instances are there where the glass-stainer has totally ignored his surroundings? A church may be Gothic, built by an intelligent architect, yet wholly ruined by its conglomeration of many-styled windows. The chancel may be adorned by an English window; another in the same style may be half way down the nave; one or two may be the very best of American work; but the majority are the regulation thing—ugly, ghostly, and all swearing at one another and at the church, no feeling of its style appearing in them; the decorative work clumsy, unrefined Gothic, and the figures classic; there may possibly be one or two windows unfilled; and one cannot help wondering what the much longed for "Artist Craftsman" would do if he should receive the commissions for these and go to see the church first, in order to have his design in keeping with the other work. Style is so rarely considered with us.

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Our architects are usually conscientious men, and have produced churches full of feeling; why is it that our glass-stainers are not equally successful? Why should it appear that they have either not looked over the ground first, or else have done so, and gone back to their factories with the intention of making a window different from all the others?

The American process of plating is in itself, perhaps, the one thing in which we have discovered an honest trick not understood by the early craftsmen. When not overdone, it is successful; by its use, almost any depth may be given to a window. Of course it usually is carried to excess, as would naturally follow in the desire to produce naturalistic effects. If, for instance, a figure be plated down by fastening one, or several, pieces of glass behind the original piece, the rest of the picture, landscape or otherwise, must be covered still more to throw it out and give perspective. Therefore, parts of windows are positively black, the subject of the design forced up to its full value, or more, and the remainder must suffer.

Where only a few pieces are plated, an uneven surface is the result from the outside, which cannot but be ugly; but when done legitimately, the entire window is plated — the whole design cut double, so to speak. If after building the first inside layer, the part which the detail is painted upon, the craftsman waxes it up on an easel of clear glass, and finds that better color can be gained, he may choose his plating in reference to every single piece. Those that are well enough may be kept so by stopping

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in a bit of clear or light glass, and those which are too light may be doubled in depth by adding another piece of the same glass. When every piece is doubled, the window may be glazed in one lead, — a wide one, which will take two thicknesses of glass, — and the result is one window, stronger than one thickness would be, and the valued effect of elaborate leading is not lost from the outside, as is the case when several pieces of glass of different colors are plated by a single sheet of one shade, which, to save expense, covers the dividing leads of the original window. To be sure, the method I mention is decidedly expensive, and in the majority of cases would not be practicable; but, done in the way described above, I can see no reason why it should be considered anything but good art.

If we study the old glass, the glass of Gothic days, we find what the medium was meant for, and those old monks who built the French cathedrals have left enough behind them to prove that they were indeed the master craftsmen.

In the windows of Chartres (I mention it because it is best known to the world as a complete storehouse of early work), if one analyzes the technicalities of glazing, it is easily apparent how the effects were obtained. The glazier there thought of three things — his design, his color, and his leading, the great factors upon which stained glass must ever depend.

The design must mean something, the story must be worth telling, and told so that all may understand the designer's intention. In their color the early

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windows are nearly always suffused with a dominant tone,—blue, red, or green,—but always built of small, many colored pieces of glass. Where there is a considerable amount of any one color, we find that it is really composed of every variety of tint in that color. No two pieces immediately adjoining are of the same depth. The rule of warm and cold, light and dark, seems to give the luminous sparkle which never wearies the color-lover.

The method of painting these Gothic windows is totally different from that used to-day. Now we outline first, and then shade, either by scrubbing lights out of a water-color mat, or by laying on shadows in oil, but in the old work the painting is chiefly in outline, with no attempt to shade. When the artist felt the need of modeling, he did it in line, or if two tones were needed in the same piece of glass, the result was obtained by a "cross-hatch" —a much more direct way than a mat or stipple can ever be, as the open bits of honest glass show between the fine black lines, and give a free openness which is always satisfactory. In painting, as in all else, the old French masters appear to have used the most direct and craftsmanlike way of accomplishing the task. Why is it we moderns, with all the successes and failures of the past to look back upon, will depart from the true way, and invent makeshifts which cannot do the work nearly so well?

To explain more fully the process of painting, I show two cuts. No. 1 is the method used in the old glass. The black line is the lead, swinging

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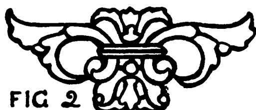
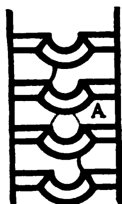
loosely around the points of the painted detail, making a simple piece of glass to cut and one not likely to break. Seen at a distance, the black paint used in outlining the ornament melts into and becomes one with the lead. No. 2 is the same piece



of design as it would be executed in American "mosaic" fashion. The difficulties of the form make it impossible to keep absolutely to the drawing; the care of mitering all the points quadruples the expense of the leading, and the result is not sufficiently satisfactory to warrant the added labor and expense.

No. 3 is a *tour de force* copied from a costly window, the work of one of our best-known firms.



Here is a piece well-nigh impossible to cut: only a very skillful cutter, a perfect master of his diamond, could have gotten it out, and that after many failures in the attempt. There are many of these pieces, one above the other, representing carving on the arms of a throne. The piece marked A is the difficult one, first to cut to the shape, and then to glaze without breaking, and finally it is not safe, as but a slight jar or pressure would cause it to snap on the dotted line. Several of these pieces are already broken,

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either in glazing, transportation, or when the window was set in position, as they are repaired with small "string lead"; evidently the maker found it too costly, even with his expert workmen, to try again. Now it seems to me that this sort of thing, interesting as it doubtless is, high sounding as the term "mosaic" may appear to us, implying the absence of paint, etc., is distinctly not craftsmanship.
We have in Boston one of the most remarkable examples of American work carried to the utmost limits of its possibility. Every bit of detail, barring the faces and hands, is in glass; each lead is apparently a drawing line; some of the female figures are arrayed in richly embroidered gowns; the ornament all in color bound with fine leads; every separate leaf and blossom of an elaborate tree is cut and leaded; the foliage cuts a jagged outline, yet the sky is unbroken except by lines which betoken clouds. To one who understands, the care and knowledge of the maker of this window commands the greatest respect; yet, as a work of art, it cannot be worth the enormous sum which must have been expended upon it.
With the use of American glass, with all its soft opaline tints, the painting of flesh has had to make a pace for itself to keep up. Dozens of different colored enamels are used to key the faces and hands to the required variety of color—shadows are purple, eyes blue, lips red. Every realistic effect of the easel picture is resorted to by the glass-painter, and that with no certainty that it will survive the test of time. We know that Sir Joshua's

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attempts at Oxford, painted in enamel colors, have gone to pieces; we are not old enough as a country to know about our own work; but we do know that black and brown paint will stand for centuries. The use of enamel glass color is difficult and the result uncertain. One color will require more heat in the kiln than another before it will anneal to the glass. When sufficient heat is obtained for one, another may be entirely overfired, and disappear. I have seen a face painted to look very well before firing, yet afterwards, because of too much or too little heat, the colors were completely changed — some of the blues and grays burned entirely away, while the greens became livid. This sort of thing has been found most discouraging, and has tempted otherwise honest people to let the parts of the window painted in color go without the requisite amount of heat to make them permanent. The work stands for a time, and gives satisfaction until the bill for the window is paid, maybe, but the paint is not part of the glass, as it should be, and there comes a time when it scales off and must be repaired.

But it is not with the chemical properties of enamel colors that I wish to deal. Is it stained glass which we have made? If the majority of the moneyed buyers are satisfied with the work produced to-day, will they go on being so? Is there not already a suggestive desire for something else which betokens a reaction in public taste? We hear more and more of fine English windows being brought over to stand side by side with our own work. May not the aims of this Society help to

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bring about an appreciation of the genuine, good, pure, transparent glass? Why is it that we cannot make windows like these old ones, which I believe we will all acknowledge are the best? I firmly believe that it is possible to revive the craft. By studying the old French work we may become imbued with the same love and respect for our material, and not expect it to attain the impossible. It need not be affectation or false art; the modern spirit could be kept; indeed, we can never lose it. It would be impossible for us to design with the naive mediævalism of the Gothic churchman, but we could put our ideas and beliefs together in a stained-glass way. The middle-aged ecclesiasticism and devout mysticism may no longer appear to give their charm, but they truly are not an essential part of the craft. We can still find subjects; even if there be lacking an absolute belief in the later legends of saints and martyrs, we still have the story of the redemption, which will prove a theme worthy the imagination of countless generations to come.

It is of common report that in these days we cannot obtain good colors in antique and pot-metal glasses (the trade names for that which is imported). This was true a comparatively short time ago. In looking at the old cathedral windows, the art of making colored glass would seem to have deteriorated from the twelfth century, which is the earliest glass to be seen used in glazing. Then the blues are deeper and more violet than in the thirteenth, and those of the fourteenth are still less good.

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Later still, the sense of the original colors seems to have been lost entirely; but now good glass is made in England, Germany, and France. I have seen two shades of German glass,—a blue and a purple,—which, when glazed together in one lead, have, at this distance, really seemed as good as the old.

Much, also, is said about the effect of time. It would not appear plausible to suppose that any chemical action could take place to alter the color in transparent glass; the ravages of time do certainly add something. It was recently discovered at York that a very minute insect had been at work on some of the best windows, eating away the glass until the middle of all the pieces are so thin that it is a problem to know how to take them out for repairing.

I once had the good fortune to mount a scaffolding built against a French cathedral, and so examined the outside of an old window. It was covered with a vegetable growth resembling fine moss, which only with difficulty could be scratched away with a penknife, so that time has added a tone to the old work which it could obtain in no other way.

The mechanical side of the craft is almost too perfect with us. No piece is too difficult for the expert cutter, and with our variety of small leads, or some of the patented processes of floating metal between the glasses, nothing is beyond the ingenuity of our glaziers; yet, with all its perfection and smoothness, the character of stained glass seems to have disappeared.

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It must be set down to the prevalent unwillingness to understand what can be done, and the stubborn desire to do that which cannot, which has led us so far astray from the glorious craft of the past — the thinking from the painter's point of view instead of the architect's. Stained glass, after all, is but a part of the architectural scheme, and the true decorator must rise to that level, instead of making his own ideals, else we must continue to build in one way and embellish in another, and the arts must be at war, instead of peacefully progressing as in those days when the word "craftsman" had its most honorable meaning.

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HANDICRAFT

VOL. II SEPTEMBER, 1903 NO. VI

STAINED GLASS

By SARAH DE ST. P. WHITMAN

THE matter of stained glass windows has such a profound and varied interest, the use and development of stained glass has so much to do with some of the most serious æsthetic conditions of modern architecture, that I rejoiced greatly on seeing a contribution on the subject from Mr. Goodhue in the July number of *Handicraft*; and because of my interest in his essay and in the subject of which he treats, I venture on a brief discourse which shall be in some sense a rejoinder. Yet as all topics are best studied and understood along the lines of their rise and development, (as one is thus enabled to trace more justly the laws which have governed and directed their growth) so it would seem well to begin with the beginning of the æsthetic recognition of glass, and reach, by a brief survey, the point of Mr. Goodhue's departure. For one cannot compare one period with another period without knowing the conditions upon which those periods have been based, the relative knowledge applied, the quality of the material employed, the level of artistic feeling and perception, and the traditions, as well as the motives, which are the living factors in the work.

Perhaps, indeed, no manufactured product has given such delight to man as glass: glass, the result of

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what was primarily one of the simplest and most accidental of chemical products; for in the life of the race, on how many a sandy beach has a rude fire been built of sea-weed, which uniting chemically with the sand has surprised the savage by a product unknown before—hard, glittering, semi-transparent, capable of resisting sun and wind and water. We realize how early this first undeveloped knowledge must have been made known, when we find set forth in very remote Egyptian drawings, the perfected crafts of glass-blowing, and the use of the very methods and tools we employ to-day—though to-day, indeed, we are no longer in possession of some exquisite processes in regard to varied uses and properties developed in glass in those forgotten times. The secrets of making ductile glass—malleable glass, glass almost as hard, and no more brittle than stone—have been long lost and appear to be irrecoverable. The Greeks and the Romans found very precious uses for glass which was in many ways akin to the glass of American manufacture; bowls, chalices and little bottles of cunning device are still preserved to testify to a lovely art, while intaglios were cut in glass of excessive hardness, with almost the same quality of elegant and delicate finish as in sards and amethysts. Thus in the æsthetic life of civilized man glass held an early place; but, so far as is known, was not thought of as a means for the transmission of light; and it is not heard of as employed in windows until sometime in the third century, in a church in Rome.

From this period, it is very difficult to trace the

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progress of glass as used to give light or decorative effect in interiors; but among the many methods in which it was employed for this purpose, we find tinted or stained glass, of varied and of very beautiful coloring, used in Arabian churches, set not in lead, but behind delicate mullions made in plaster —upon and through which, the various colors of the glass shine with a peculiar charm.* But all that may have been done to beautify interiors by the use of glass, clear, colored, or stained in whatever way,—all was but a prophecy of what was to come with the great Gothic movement; which gave, as we shall see later, unique opportunity for a new and perfect result.

Whatever may have been done in other countries, it seems clear that the first serious step towards importing the art of glass-making, was taken in France, about the sixth century; when a little company of Greek workers in glass were brought over and established as a colony for its manufacture, in very many towns. Long afterward, perhaps two or three hundred years, members of this colony drifted to Venice, and there began to develop their craft under new and stimulating conditions; for they found a people sensitive to æsthetic beauty and the Adriatic lying before them like a dream of light and color. But in France the development of the craft of glass-making was more austere, owing, one may venture to believe, to those deep, strenuous influences which work in generations of artists and

*Examples of this work may be seen in the Museum of Fine Arts in Boston.

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craftsmen at the beginning of every great æsthetic movement. It is justly said that no supreme development of a great new order was ever so brilliant, so unique, so brief, as that achieved in the Isle of France; when in two hundred years were built all the "Great Eight" cathedrals (including the solemn apse of Beauvais) as well as that lovely company of Gothic churches, large and small, which all over France were kindled like so many fires, and remain as monuments of human love and faith. Mr. Goodhue speaks of the "old monks who built the Gothic Cathedrals"; and we may believe that many a monk in his cell contributed diligent study, or religious zeal to the great flame of energy then rolling up into a mighty engine of creative impulse; — but we must remember that in those fiery moments came architects such as were not known before, nor after; — capable of inventing a wholly new principle in architecture, of leading intimations derived from the Romanesque order, to their rich fulfillment, and of expressing in stone religious aspiration as it had never been expressed before. The deep relationships between music and architecture have been long admitted; and one may say of the musical composer in Browning's poem that he represents in music what the architects of the twelfth century represented in building "when out of three sounds he framed, not a fourth sound, but a star." With the architects, and aspiring to help them, came the bishops and prelates and laymen, came the rulers and kings, came the philosophers (as when Vincent de Beauvais gave schemes for the rose-windows),

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came the great common people; until finally, mementoes of even the willing oxen were wrought into gargoyles for the Cathedral of Laon. These were some of the living elements which conspired together to make the great Gothic period. The glass of this period was one of its most distinguishing and distinguished features. To begin with, the gray stone which was used, within and without, as a building material, gave the most perfect wall possible for the setting of colored glass, while the richly elaborated mullions of the windows furnished almost endless opportunity for those conventional traceries in which were embodied allusions to the heavenly hierarchy, to historical or traditional events, and to the daily life of the people. As Mr. Goodhue has said, the windows of Chartres are perhaps the best known: but still more are they significant as belonging to the best period, and as being an almost unbroken series which though often menaced was never destroyed. They indicate, more perfectly than those of any other cathedral, an order of arrangement: all the lower windows dark and rich in color (save for an occasional lovely "grisaille," made of small fragments, and painted in many forms of diaper work to give variety to the surface; in the clere-story very large pieces of glass are used for flat, conventional figures, while the lovely Rose is pale, and ranks as perhaps the most elegant and highly-wrought of all the rose-windows of France. If at Chartres or Amiens one gets leave to climb within reach of the rose-windows, one finds that much of the glass used there was of a rough, almost

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jeweled thickness, very irregular in surface, and made to seem still more rich, by being heavily matted, and set into lead almost incredibly broad. Every inch was therefore greatly enhanced in effect; and at Reims, where the rose is the richest and most varied in color, this method must have been used at its height; for there one finds large sections where the effect is more like lead pierced by color than color encircled by lead; while to all this richness of lead and matting, is added the accumulation of dust, doubtless the dust of centuries.

It is probably true that at Chartres one could learn all that is best in the treatment of glass in the twelfth and thirteenth centuries. Nevertheless it is from this point that the French glass-workers began slowly to decline in the sincerity and purity of their work. Some of the stained glass in Germany based on the principles derived from France, and a few in England at a later date, had fine echoes of the best things; but in France herself the coloration of windows became poor and weak; the lead grew to be less and less considered according to craft-traditions, while the painting in cross-hatch, and, even in large thin washes, grew more and more to be a method employed to produce florid and vulgar results. As Mr. Goodhue has said, the decline in glass as well as in craft was very great, and the so-called antique glass and pot-metal was for many years made of so low a grade that only lately could one again obtain these glasses in pure tones. Very recently, together with decorative work in other ways, Edward Burne-Jones and William Morris

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revived the craft of stained glass in England, and Burne-Jones made many charming designs on a semi-Gothic basis, which were rendered in antique glass, very much restored in color and quality. I have always thought that a little square window by Burne-Jones, which may be seen in the Baptistry of Trinity Church, Boston, was perhaps the most perfect illustration of his work in glass. The subject is Solomon instructing the young David in the building of the Temple. The color in this window is very beautiful, and the composition singularly elegant and harmonious. The figures are drawn in the semi-mystical manner so characteristie of their author, and the method of painting the shadows and details is quiet and restrained, so that the mass is kept very flat. In work within the lines of Gothic tracery, Burne-Jones often showed a slightly flamboyant or half grotesque manner of treating details, but here everything is sustained within severe lines, and the effect both in line and color is elegant, simple, and full of religious feeling.

It was perhaps just at the moment when this little revival had its place in England, that there occurred in America one of those chance observations of certain effects not specially noted before, which opened the door to experiment, and led to the discovery and subsequent development of a new form of stained glass, in which it was possible to attain an infinite variety of tones in the same sheet, together with a variation, if desired, of thickness also. The so-called opalescent glass derives its name from the fact that by the use of certain chemical sub-

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stances, the glass, whatever be its color, has that quality which is in the opal, of showing a spark of fire where the sun strikes upon it at a certain angle; and when this happens in connection with a large surface, where it can be more radiantly expressed, there is a magnificence of effect never seen before. The variation in thickness gives opportunity for selection of dark or light pieces, large or small, in which the variation of shade being a quality in the glass (according, that is, to whether it is thick or thin), the variation has a purity of tone which cannot possibly be obtained by any process of cross-hatching, stippling or matting, in all of which processes one obtains depth of tone by the use of pigment, and at a cost of destroying to a sure degree the essential color of the glass itself.

The manufacture and use of jewels is also a large factor in American glass, as they have many legitimate uses in the making of windows, and give brilliancy and a highly decorative value to the work. White opal glass also is a wholly new and very beautiful addition; for by the use of white opal it is possible to make again the old grisaille windows, with a loveliness yet more varied and enduring; as a thin white opal glass takes the place of clear sheet prepared with an acid, jewels can be used at the intersection of the quarries and the border made with a delicate string-lead strengthened and enhanced with a richer leading wherever the construction makes such use necessary.

It is here that the "Artist Craftsman" sometimes so-called (I do not think this modern term a good

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one, for the true artist or master has always exercised supreme and directing impulses towards the expression of the Beautiful in its infinite forms, and the true craftsman has always proved his art by the nobility and excellence of his craft; and they will, I doubt not, continue to do so),—it is here, that the Master, in collaboration with the craftsman at the benches, has the opportunity to express those "nuances" of treatment, which constitute what we recognize as the sentiment or feeling of the work. He has a deep perception of the work *as it is to be;* and the cutters and glaziers recognize this ideal, sympathize with it, and endeavor to express it, for only under such conditions can great results occur.

But perhaps it is best here to take up, one by one, the criticisms of Mr. Goodhue, of work done in American glass, a glass full of opportunity for expressing beauty both new and old, but so recent and so little understood that it is capable of the gravest misuse; in order that by virtue of the rejoinder one may perhaps find more points of agreement than are at first apparent. Two or three terms used by Mr. Goodhue with a new application are at first confusing. He speaks, for instance, of the objectionable "mural feeling" in the making of windows in America. Now most of us have always been accustomed to use the term "mural" as it is used by architects, and that is understood to be keeping in a decorative window the quality of the *wall*, as regards flatness and the requisite strength. A window which has its figures elaborately modeled,

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or employs forms which involve perspective treatment, would sin against the "mural" traditions by carrying the eye beyond the line of the wall. It must be that Mr. Goodhue in thinking of the mural painters has transferred some of their sins in too highly modeled work on the wall, to the windows as well, and called the defect *mural.* But surely the old definition still holds.

Again, what Mr. Goodhue says of the production of "pictures instead of decoration" points to that mistaken effort in the use of a new stained glass, so rich in its possibilities, so varied and suggestive in its effects, that the first manifestations of its use, in any hand save that of an achieved artist, must lead to abuses and misconceptions; but it is not in the glass itself, but in its use. The hard constructive line must always be, in stained glass, the designer's mainstay for his work. It is that which gives efficacy to conventional treatment, and enhances the value of the glass by contrast and by stability. (Witness the result in Mr. La Farge's "Battle Window" in Memorial Hall Cambridge, done in his early manner, and recalling all other great work in stained glass. A window which Phillipe le Bel and Jean de Berry would have understood, though its conventions are so different from theirs.) With these constructive lines established, smaller lead can be used to advantage, where neither the drawing nor the construction need to be emphasized; but where variety in the tones employed gives a fuller and more significant scheme. It may be well to mention in this connection a

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mode of treating small windows where the fragments of glass are also very small and the infinite variety of tone and thickness in these morsels of opalescent glass lend themselves to a rich mosaic effect. Here the guiding lines of the composition are established in string lead, and the minor pieces of glass are laid one against the other, in mosaic fashion, and the irregular spaces are filled with lead poured from the lip of a cup, which flowing around the fragments, leave the surfaces free, and make a substantial backing of lead at every point.

The so-called process of "plating" (an invaluable method of adding to the depth and richness of one piece of glass by glazing another piece on top of it), Mr. Goodhue calls the "one honest trick not known to the early craftsmen." This new source of beauty and utility could not be a "trick" if it were honest, and could not be "honest" if it were a trick. I think, therefore, that those who are interested in good and beautifying processes wherever found must be allowed to consider the method of "plating" a legitimate contribution to the glazier's craft. It also enables the designer to work with a fuller palette, and thus to reach more subtle and enduring results. Complaint is justly made of the indifference shown hitherto in regard to the effect of opal glass on the outside walls by day, and inside, at night; for where the new glass is used in cheap commercial work very scant attention is paid to these purely æsthetic questions. But it is assuredly necessary that a window made in any degree of light tones should be thus studied,

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and it is only a matter of careful adjustment by means of which the windows in the outer wall are made agreeable by day; while by night the windows on the inside, instead of having the irregular and eccentric look that is so objectionable, can be rendered wholly agreeable and often give the effect of a fresco, which is generally much preferred to the dark, empty spaces which the earlier windows leave in their places by night. Just complaint is made also of the treatment of the heads and hands as seen in American work. The true key of color, the true conventional note in the flesh is seldom expressed, owing to inexperience, and the difficulties imposed by a richer medium than the transparent stained glass furnishes, and which involves a larger study than time or experience has yet allowed. I do not quite understand what genuine work in American glass Mr. Goodhue complains of as using "shadows in oil;" for the genius of the new glass is its freedom from any treatment whatever with paints or glazes, the deeper tones being obtained by plating one piece of pure glass upon another piece of pure glass till the desired effect is reached.

It is a just complaint that in many churches to-day we have what has been called museums of stained glass; examples drawn often from sources as diverse as Gothic and Romanesque, and executed by English, French, German and American craftsmen, with the treatment corresponding to all these different methods and manifestations. Ecclesiastical style and its maintenance is destroyed, of course, in

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the windows of any church which does not demand, in the first instance, that the decorative style of the windows shall correspond with the architecture. Yet architects themselves are very often indifferent to these sins against the order of the church; nor do we find in the colors used in the interiors any very grave consideration of the essential relation in tone and color-scheme that the walls must surely bear to the stained glass windows which will inevitably ensue. That noble gravity, of which I have already spoken, in the gray stone of the French cathedrals cannot indeed be hoped for in the little churches so rapidly multiplying. But the beginnings of beauty lie in perfect simplicity; and a rough white mortar wall is not improved by a cheap fresco. Rather in its honest innocence from pretense, it furnishes opportunity for Christmas green or Easter lilies or one little memorial window, to count as a decorative effect of a really high order; and it is by such realizations as these that one hopes and believes that before long the pretentious and false art forced upon us by commercial enterprise will be left to its legitimate decline.

As I think I have made evident, this brief rejoinder is based first upon what seems to me — though I am quite sure Mr. Goodhue had no such intention — a not wholly just criticism upon a new and very rich contribution in the shape of glass of a new form of excellence. It would appear that he has been led to condemn the material and its possibilities, because of the inferior purposes to which it has been sacri-

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ficed. For what are the facts? The first experiments in the making of opal glass were made only about thirty years ago. The number of serious artists who have legitimately used and developed it is very few, and they have been obliged to invent new craft-methods to suit its capacities; while the commercial opportunity was seized upon and enlarged by clever business firms who recognized the love of novelty, in our young, ignorant multitudes and made of the new product a terrible form of "Art Nouveau." Is it then quite fair that the beginning and strivings with a new element of beauty in an alien air should be brought into contrast with the glorious fulfillment of the supreme decorative impulse of a great nation inspired by a universal religious impulse, and, as I have shown, working towards the Gothic epoch for many hundred years? Once more, Mr. Goodhue asks why it is that with the perfect art still visible in the stained glass windows of the Gothic revival, the artists and craftsmen of to-day, who alike with him behold and adore these windows, are not willing to follow their perfection and repeat them "without their naïve medievalism." Alas! should we not have the rose without its perfume? Would not this following of the scheme, without its naïvetè, rob the method of a prime factor? How would the primitive legends, and their mode of expression, be translatable into our "exact knowledge" or our "honest doubt"? Or yet more deeply, is it not true that it is in only the expression of his own ideals, in making real the dream of his own heart, that the artist learns the

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terms of his own mode of expression? The true pilgrim prays at all the shrines; he asks a gift from every heart that ever loved; he loves and labors mightily, and some day there comes from his faithful hand a little new product, born to endure; for because of his love and reverence he has been allowed to translate life into art.

I think we shall all agree that no man, nor no epoch, can tell us all that we need to know. For that last word we have to agonize. The inspiration of to-day for every artist lies in the recognition of all that is great and beautiful in the past, and of the bountiful opportunity of the future. In endeavoring to express his dream he is stimulated but not bound by traditions; in the art of stained glass not only are the noblest examples of the greatest period open to him, but the material with which he is furnished for the exercise of his impulses is drawn from many sources, and allows for an almost infinite compass and variety in the expression of his motives. He has, renewed in perfection, the beautiful old stained glass of the twelfth century; the rich, varied, and stimulating stained glass of recent invention; he has onyx and alabaster and rose-dorée marbles from the quarries of America.

Dreaming of the possibilities of these things one is tempted to believe with Emerson, that some fair day in our new world, "Beauty will indeed come unannounced, springing up at the feet of noble and just men."

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