

PLASTERING, PLAIN AND ORNAMENTAL.

By W. J. HYNES.

GENTLEMEN:—I am before you to talk on plastering, plain and ornamental. A local experience is all that I can speak from. I was born in this city and have followed my calling for 27 years—long enough to qualify me as an authority on the subject. I am not very diffident as to my knowledge, but I have my doubts as to whether I can place it before you properly, and I am most anxious to interest you in a much neglected art.

I propose making a short review of materials before taking up their use and application. The first is Lath.—My experience calls for great care in the selection of this material. A soft white pine, that will stay where it is nailed, is my preference. It should be seasoned, but not necessarily dry, and have a straight grain. When a dry lath is coated with mortar it must necessarily swell, and when it dries again it must shrink. A lath which is not thoroughly dry will not have so much shrinkage and will have a more secure key. Wire lath nails $1\frac{1}{8}$ " long are what we generally use; there is no advantage in having them heavy, but they must have a good flatted head. Metal lath is now offered in many forms; I do not intend to indicate my preference; there are several good articles on the market. I will merely ask you to examine samples in the full sheet—note the stiffening; they should be rigid every way. Satisfy yourself as to the key and effect upon it of a settlement or shrinkage in the building, and always have it painted or galvanized. Wire lath is good—it is almost all key. It is more expensive to buy, apply and cover than metal lath, and for that reason is not so much used.

Lime mortar is in general use, and most of our specifications for the preparation are taken from English authorities. I will not attempt to give you the theory of lime—most of you had a full explanation of that in your student days. I think that the Architectural Chair of our University might devote some attention to the examination of the various limes offered in our market with the proper proportions and description of sand they will carry. Until such time as this is done, I would advise you to have your work done by contractors in whom you have confidence. Good work can be done with lime, but it is a very variable article; we are well served in Toronto, but some very bad limes are used in the country. Our mortars are mostly made from grey lime; they are cool in working and should be given ample time to thoroughly slack before mixing with sand. Haste upon the part of the mortar man or a tendency to stir up the mass before it has slacked, will most likely result in lime pitting on the finished wall. In some lime or in fact in all lime, if not properly burned, there is great danger from this. There seems to be an underburnt core which very often disfigures good work. As this generally occurs in winter work the cause is more often with the mortar man than with the lime itself, but be as careful as you may it will occur sometimes.

Lime putty is made from white lime, generally called fat or rich lime. It is run in large vats and should stand a month or more before using. This material has no strength in itself and requires to be mixed with sand or gauged with calcined plaster before use.

Hair is necessary for mortar for use on lath work, and a smaller quantity is of decided advantage to the straightening or browning coats. It should be clean, well saved, long, winter cattle hair, Hemp, sisal, palmetto fiber, and many substitutes are used instead of hair in other places, but are not offered on our market.

Calcined plaster, the most useful of our materials, is used for many purposes. By mixing one-fifth to bulk with lime putty we obtain the compound for what we call "hard finish." A greater quantity mixed with the same putty allows us to form run mouldings. Where the thickness of moulding is too great to use putty and plaster, the work is cored out with mortar gauged with plaster. Quick work can be done by gauging the first coat of mortar in plastering to admit of finishing at once.

Its greatest use is in moulding and casting decorated ornaments, staff and fibrous plaster work. The property it possesses of swelling when setting serves to give us most faithful and accurate copies from any original, hence its extensive use in fine art. In addition to this, calcined plaster forms the basis of nearly all the patent or prepared plasters. By the addition of retarding and hardening compounds its setting is delayed sufficiently to allow of mechanical manipulation, while its ultimate strength gives a much stronger wall at once than can be obtained by using lime. My own conviction is that in time most all our work will be done in

those materials or with machine made mortars whose proportions are fixed and accurate. Plaster is also the base for the white cements, such as Keene's, Parian, Martin's and others. Just here I would say that principally through your own fault, gentlemen, I do not consider myself an authority upon those cements, and shall not dwell further upon this than just to say they are perfect goods, make perfect work and deserve much more attention than you have given them.

Before speaking of lathing I have something to say about the necessary preparation therefor. The genius who first conceived the idea of making the plasterer responsible for the carpenter work by a clause in the specifications calling on him to examine all studding, strapping, &c., before lathing, and if not found correct to stop and report same to the architect, could not have grasped all the facts: 1st, the carpenter is a bad man for the plasterer to fall out with; 2nd, tale bearing is not congenial work; 3rd, lathing is done at the rate of 2 or 3 cents per yard by a boss lather who is hustling a gang to make his work pay. It is easier and cheaper for him to get over the carpenter's bad work than to lose time and report it. If the angles are not solidly nailed the lather is not likely to do it; if a line of joisting demands the cutting of 8 or 10 inches off the lath for a long distance, the chances are the lather will find a convenient board or scantling, place it where the joists or stud should have been, and make his nailing to this loose piece, trusting to the lath nails to hold it until plastered. This is bad—very bad—but who is to blame? I say the architect is. If joisting and studding are not sized and one bulges below or forward of the others, it is easier to add on a few laths and give the wall or ceiling a graceful but incurable curve than to wait on a carpenter to trim it. Kindly examine the carpenter work yourself; don't dodge or depute your responsibility.

Have your lath laid in bays with breaks every 15 inches. Have a $\frac{3}{8}$ " key on walls and slightly larger on ceilings. Don't allow carpenter work to force the use of vertical lath. Have heavy timbers counter lathed. Don't allow laths to break over door post; slamming that door will break the plaster. Use plenty of bridging on joisting and studding. Strap all ceilings. Have false arches and beams made very rigid with as little timber in their make as possible. See that all junctions of wood and brick work are nailed very solid, and have them covered with metal lath; 16 inch centres is the greatest distance that should be allowed for $1\frac{3}{8}$ " lath; it is too great for 1 inch lath; they should have 12 inch centres. Try and have your work so correctly planned that the lather can make money; he will give you a good job with pleasure. The only way I know to do this is to have that greatest of all boons on a building, a good carpenter—the only way to get one is to give him a good paying price. He wants to live, too.

Now before the mortar is applied, before even the lathing is started, any ordinary good job should be well prepared by grounds. This is generally done badly, and the results are always to be seen before completion. The entire details of the interior finish should be made before this work is done; it's the only way if you want it correct.

Perhaps I have been too lengthy on this particular question, but I wish to impress upon you that good plastering demands solid, firm and well prepared work to secure it. I am not here to tell you what bad plastering requires, but your chances of holding up bad work are good if work is prepared properly.

If, as I have suggested, the details have been prepared, the grounds fixed, a very definite idea will have been formed of the character of each portion of your building and you can definitely specify the proper finish. Two coat work is most general. It is sufficient for ordinary rooms to execute this work as so often specified—plumb, true and straight is not possible. One coat of mortar only can be finished with that wonderful tool we call a "darby;" it is a great implement for effecting a general levelling up, but don't try a straightedge on work left after it.

Hard white finish is made by gauging lime putty with calcined plaster and trowelling it to a finish before it sets. Perhaps some of you have discovered that hard white finish is misnamed—the hardest lime finish is never white—the strength of this coat is improved by the addition of sand.

Now if your work is to be decorated, if expensive paintings and paper are to be applied to it, you should hesitate before placing them upon work that is neither straight nor strong. Three coat work admits of proper straightening. It will also on ceilings generally guard against the danger of seeing each joist and lath some time after work is finished, and further it gives you an opportunity to finish it as your work demands.

* Paper presented at the Eleventh Convention of the Ontario Association of Architects.