SIZE ON OLD WALLS.

A SUBSCRIBER of the Painters' Magazine asks why smooth, white coated plastered walls that have remained so for a number of years, that have been frequently washed with soap and water, will form a coating (by reason of this special washing) from which regular glue size will not prevent wall paper from cracking and peeling off. Is there any size which will hold paper on such walls?

This, says our contemporary, is not by any means an every-day question. The fact is that in our experience we never came across such a situation. Our answer will have to be in the main a theoretical one. The conditions are somewhat peculiar, for the reason that soap will not so affect all walls. If the white coat, or smooth coat of plaster, be mostly plaster of Paris, as is usually the case, this condition would not come about, no matter how much washing the walls had with soap and water.

On the contrary, if the smooth coat was composed to a great extent of "fat lime," we can, perhaps, see how this condition would arise. By the repeated applications of soap and water, a chemical action might take place, between the excess of lime in the plaster and the soap, forming a lime soap or sort of calcium oleate, which is absolutely impervious to water. In time this would become very hard and glassy, and, we think, would be very likely to throw off any paste or water size, whether made with glue or any like substance. It is possible that the paper hanger's "hard oil"—gloss oil—would hold to that surface. We suggest two modes of treatment. Wash the affected walls with a water containing a small percentage of sulphuric acid, not much, just about enough to well sour the water. Give them a good washing, and the next day wash off with clean water, and proceed with a common glue size, or, we doubt not, but paste will hold, without sizing.

The other course of treatment would be to go over the walls with a very coarse sand-paper or any like material; in that way slightly scratching or harrowing up the surface, to allow for a good anchorage for the size, paste or hard oil which would afterward be applied. The latter course is the easier and quicker gotten through with, and I think it would answer. The washing of the walls with acid would certainly answer the purpose. I wish the questioner would advise us as to his results.

A master painter of wide experience, to whom the question was submitted, gives the following answer: Plastered walls that have for a number of years been frequently washed with soap and water offer a naturally repellent surface for the reception of wall paper when simply treated with regular glue size. The accumulated caustic chemical properties upon the walls attack and work out through a regular glue size of ordinary thinness, and the disruption of the size carries with it the cracking and peeling complained of. A great deal of importance should be attached to making and applying the size upon walls, and most emphatically is this true in the case of walls calling for a special treatment. For a size intended to cover such walls as described by our "Subscriber," take ¾ lb. of white flake glue, the glossy semi-transparent kind, and put it to soak over night in enough water to nicely cover it, making due allowance for the water which the glue will take up. In the morning bring it just to the boiling point, when it should be dissolved. Then take 4 ounces of pulverized alum and dissolve in a quart of boiling water. To 2 gallons of clean soft water now add the alum water and the glue. The alum will harden the size, and act as a "fixer," holding in sturdy check any disturbing substances which the alkali-smeared and saturated wall may contain.

From Subscriber's description we are led to infer that the walls are in a good state of preservation. Otherwise we would advise making the size of a stronger percentage of both glue and alum, as for example: One pound best white glue, first soaked in cold water and then dissolved in hot, as previously described; three-fourths pound of pulverized alum, dissolved in quart of boiling water. After mixing the glue and alum water, add cold water to make six quarts of size.

The cracking and peeling of wall paper is not always due to negative or badly conditioned walls, and it is therefore not always a safe plan to ascribe the breaking up of the paper to the unadaptability of the wall. The paper hanger may use his paste too thick or too thin; also, he may put on too much or not enough. Or, again, he may fail to brush the paper down firm enough. The paper itself may be at fault. Some papers, by virtue of their brittleness, are more liable to crack than others. A paper which, when wet, will expand the most, is liable to crack, because in drying the shrinkage is often so great as to break the fibers. All such factors deserve study when considering a problem like unto that which our subscriber seeks to be enlightened upon.

SCIENTIFIC PLUMBING.

THE following extract of an excellent address given by Professor J. G. M'Kendrick when opening the exhibition of plumbing work and sanitary appliances, held in connection with the recent Plumbers' Congress at Glasgow, will well repay careful reading.

"Some may ask, why should the public be interested in plumbing more than in the work of the carpenter, or the mason, or the slater, or the plasterer, who also have to do with the construction of our dwellings? No doubt we depend on all the trades, but little consideration shows that, so far as our comfort and heaith are concerned, the plumber has it in his power to influence us more than any other tradesman. When we consider the plumbing work to be done on the roof, the arrangement for carrying off rain water, the efficient construction of waste and soil pipes, the conveniences of the closet and the bath-room, the distribution throughout the house of gas and water, the system of house drainage, the means of ventilation, we see at once how the plumber more than any other tradesman can make or mar a house. It is, therefore, of great importance that he should be well educated, both in a general way and technically for his special trade, and it is only reasonable that the public should have some guarantee as to his efficiency.

I have no doubt this exhibition must also illustrate some of the advances made in plumbing and sanitary appliances during the last ten or twenty years. For the more ordinary article of every-day use there has been an enormous advance, so that almost everything we now use is better suited for its purpose than its representative of say, twenty years ago. So has it been with the work of the plumber and with sanitary appliances. The use of drawn piping instead of hand-made pipes has made it possible now to have thoroughly tight joints. The modern bath room, in its simplicity and durability, is now almost perfection. All its appliances are handy and fitted for use, and, as a rule, the room is not now a