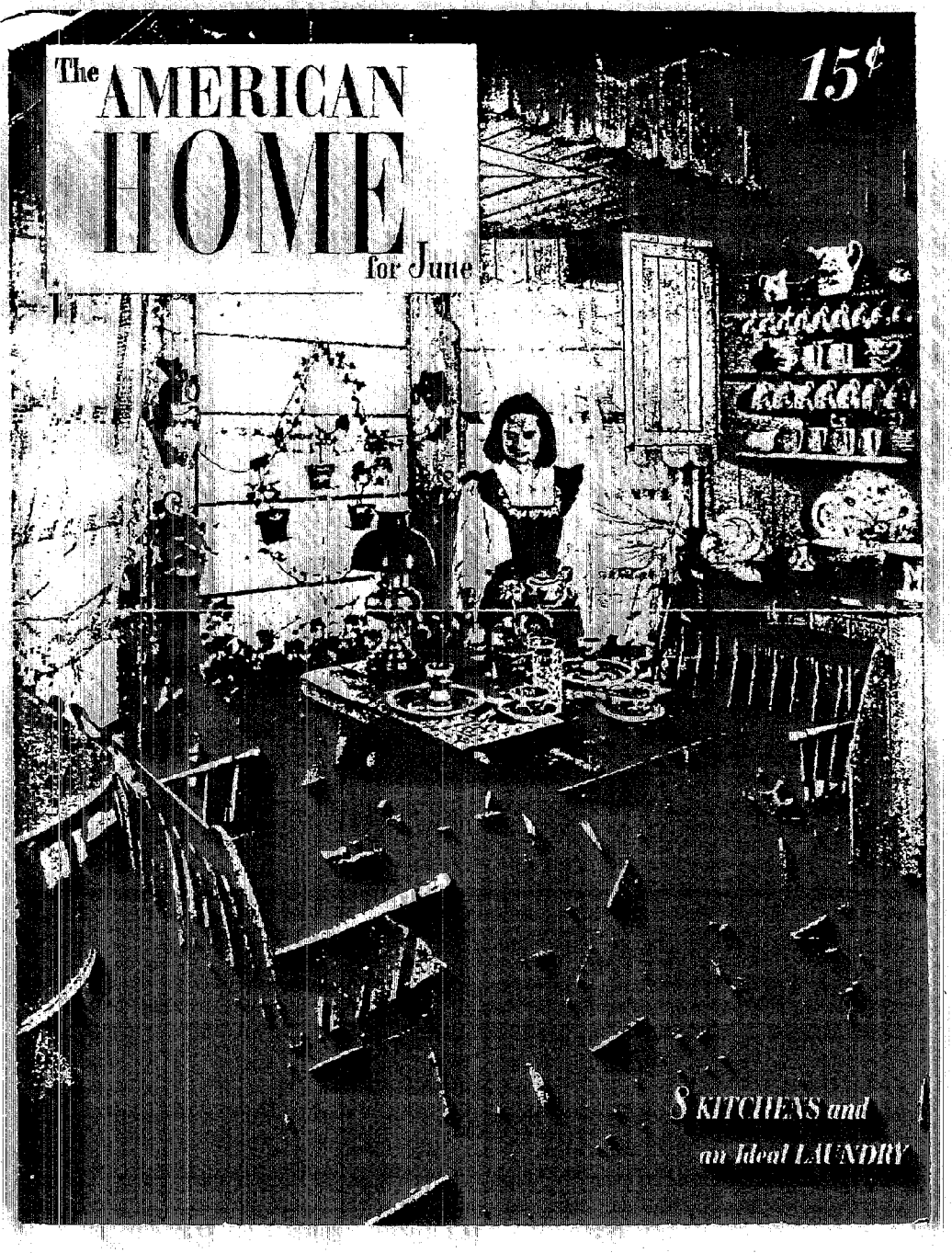

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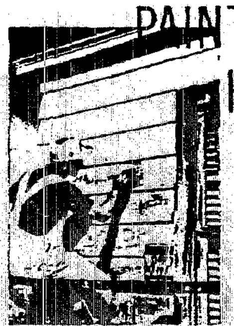


PAINTING A HOUSE...

Photographs courtesy Sherwin-Williams

William W. Atkin

PAINTING a house is good hard work. If only we could get some kindly soul to do all the preliminary scraping, sanding, and puttying for us, painting wouldn't be hard at all. Of course, many people don't bother with this preliminary work but go on their merry way with paint and brush, painting right over the dirt and rough spots. The person who does this is nearly always dismayed, a short time later, to discover that his paint is peeling, cracking, blistering, wrinkling, running or otherwise failing. He must then go to the expense of having a professional repaint the entire house. If the paint failure is very serious, all the old paint, right down to the bare wood, will have to be removed. This means three new coats of paint must be applied instead of two. If the amateur had spent sufficient time and effort on details, had bought good paint and applied it properly, his work might have lasted four or five years, and, when it finally was time to repaint, his house would have required only one or two coats.

The homeowner can't be expected to be an expert in every phase of home maintenance, but he should have some idea about the kind of products he is required to use, and how to use them. Painting is a job that looks too delightfully simple, and the amateur is likely to tackle it, thinking he will be able to save money, without having any idea what goes into paint, how it is put on, and what causes it to stay put.

HOW TO JUDGE PAINT

The reason a lot of paint cracks and begins to look like alligator skin is that it is not properly made to begin with. Exterior paint that is extremely low in price, compared to well-known, advertised brands, will be low in quality, too. *And there's a reason!* The ingredients that go into good outside paint are expensive for the manufacturer to buy. Consequently, he is forced to charge a correspondingly higher price for his product.

Exterior paints consist of three major ingredients: a pigment, a vehicle, which includes a binder, thinners, and driers. All three of these ingredients are important, the pigment because it is responsible for the covering power and the durability of the paint; the binder portion of the vehicle, while it is partly responsible for durability, is also necessary for flexibility. The latter is of utmost importance in good paint, because the paint film must be able to move as the wood beneath expands and contracts. Thinners and driers must be of first quality, too. White lead, titanium dioxide, and zinc oxide are the pigments most often used; they are excellent products and have stood time's test admirably. Linseed oil, raw or boiled, is an old standby that has been used for years as a vehicle. However, some of the thickened oils, developed before and during the war, are coming more and more into acceptance by paint manufacturers. Petroleum spirits and turpentine are the thinners most often used, while driers are used in paint only when raw linseed oil has been used as a vehicle. Boiled linseed oil and thickened oils include driers.

Of the three major ingredients, the pigment and the vehicle remain on the surface, while the petroleum spirits, turpentine or other thinner evaporates. Therefore, the popular idea that the addition of thinners will stretch paint is a misconception. All that the addition of thinners does, beyond making the mixture workable, is to spread the pigment and vehicle over a greater area. If too much thinner is added, it will simply require more coats to cover the surface. Titanium dioxide, white lead, and zinc oxide are not the only pigments used; they are basic for most light-colored paints. Carbon black, iron oxide, and natural earth pigments are most commonly used in black, red, and brown and other dark-colored paints.

Ready-made paints are available in a wide range of colors, but some painters still prefer to mix their own paints and, with paste paints or paste white lead so readily available, this is not a difficult task. Makers of paste paints and paste white lead and other pigments will be glad to supply proper formulas for mixing their materials, if you wish to make your own paint.

Aside from the relatively higher cost of good paint, quality can be determined by knowing the ingredients that are used in good paint. Formerly, manufacturers included an analysis of their paint on the label of the can. Most manufacturers have dropped this practice since the war, however, so you will have to depend on the reputation of the manufacturer and the honesty of your paint dealer as far as quality is concerned. First class paints for outside use will include titanium dioxide, white lead, zinc oxide, extruders, tinting colors and thickened oil or linseed oil to about 90% of the total volume. Poor paints will include such ingredients as silica, whiting, chalk, magnesium and aluminum silicates, calcium, sulphate and lithopone in large quantity. Some of these ingredients also are used in good paint, but they will not make up more than 10% of the total volume of the paint. "Pure oil," "boiled oil," "volatile oils" and "paint oils" are names often used for interior paint vehicles. These are used by unscrupulous manufacturers because they are cheaper than the thickened oils or linseed oil used in better paint.

Low-quality paint includes large quantities of water. This ingredient masquerades as "emulsified solution," "colloidal solution," "solution," or "aqueous body agent." As much as 35% water and another 28% of another volatile liquid may be included in a low-quality paint. All this volatile liquid, up to two thirds of volume, evaporates when the paint dries.

When paint fails, it can be attributed, quite often, to the use of inferior products. However, even good paint may fail if it is not properly mixed or applied, or if the surface is not adequately prepared. No paint will last indefinitely—its average life is four or five years. This means a house should be repainted with one or two coats at least that often.

TYPICAL PAINT FAILURES

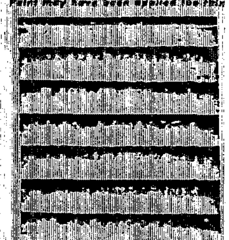
The pictures included with this article show a few examples of paint failures. The center photograph on page 67 shows what happened to a

First step in preparing to paint your house is to remove all loose paint with a putty knife or paint scraper

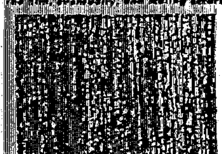
Go over rough spots with No. 1½ sandpaper before applying any paint. Also, let wood dry thoroughly if it is wet

When paint has been removed to the bare wood, bare spots should be given prime coat before proceeding

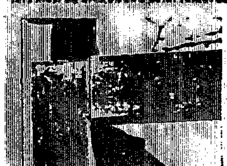
All good paints chalk. In this picture paint has chalked excessively. Paint may have been applied too thin



Cheap paint cracks all the way to the wood. Moisture finds its way behind the film, eventually, and peeling occurs



This surface was painted when the wood was wet, causing blisters. Blisters must be broken and paint removed



surface on which cheap paint had been applied after only 1½ years. In this case, the paint has cracked all the way down to the wood. Eventually, moisture will find its way behind the paint film, and the paint will begin to scale. The cause of this paint failure is a paint that is too brittle. Lack of elasticity in the paint film makes this fault inevitable, because the paint film should stretch and contract with the movement of the wood. Here a slight saving was effected by the use of cheap paint, but the owner will have to remove all the paint down to the bare wood and start all over again. Another failure that looks much the same as cracking is alligatoring. This fault is not so serious, however, because it affects only the first layer of paint. It sometimes happens when the coat beneath is softer than the succeeding coat, because the former has not had sufficient time to dry or because more oil was used in it than in the succeeding coat. It is not always necessary to remove paint when this fault occurs, but the surface should be sanded thoroughly or the pattern will be visible under the new coat.

The top photograph on page 67 shows a paint that has chalked excessively. All paint should chalk to some extent as time goes on, but it should not occur for at least a year after the paint has been applied, and then it should not be as excessive as it is in this case. Paint that chalks excessively was probably applied too thin or applied during damp weather.

Blistering, shown in the bottom photograph on page 67, will occur when paint is applied to a surface that is wet. The presence of water prevents the paint from gripping the surface properly. The solution to this problem is, of course, to be certain that any surface you are painting is thoroughly dry before applying paint in any form.

Tackiness and slow drying may occur when paint has been used with a low-quality vehicle, or with insufficient driers. Good paints always will dry eventually, but inferior paints may never dry, in which case all the paint will have to be removed before any repainting is done.

If paint wrinkles, it probably has been applied too thick. The remedy is to use thinner paint and brush it out well. In extreme cases paint that has wrinkled may have to be removed. Usually, though, a thorough sanding of the surface will suffice.

TOOLS AND EQUIPMENT

When you have bought your paint, consider the brushes you will need. If you are going to work alone, one good 4" brush and one sash tool to cut around glass and other areas of that kind will be sufficient. You will also need some other equipment, such as an extension ladder, which often may be rented, a stepladder, mixing buckets, stirring paddles and hooks. The latter may be made by bending a stiff piece of wire into an "S" shape; they will come in handy because you can hang one loop of the "S" over the rung of the ladder and use the other to hold the bail of the bucket.

PREPARING THE SURFACE

To prepare the surface, you will need a putty knife, a scraping knife, a dusting brush, putty, sandpaper and, possibly, a blowtorch or paint remover. Sometimes it may be found that some surfaces are in good condition and others show paint failures. Chemical paint removers may be used to take off the paint in the bad spots. Apply the liquid with an old brush. This will cause the film to bubble up and lose adhesion, so that it may be scraped off with a scraping knife.

When you have taken off all paint that has failed, go over the entire house with No. 1½ or 2 sandpaper to remove rough spots and dirt. As you go along, dust the surface with your dust brush and putty all holes or cracks with a good grade of white lead putty. This preparation means a lot of work, but you will be rewarded when the paint finally is applied. In areas where paint has been removed to the bare wood, a prime coat will be necessary. This coat will be of a different formula than the final coat or coats. Your paint store will be able to supply you with a primer, if you are using ready-mixed paint.

APPLYING THE PAINT

The rest of the job is fairly simple; it is just a matter of applying the paint. Many amateurs have a way of dipping the brush into the paint so that the metal binding at the top of the brush, and half or all the handle, is covered with paint. It is better to cover about half of the bristles with paint, apply it on a handy-sized area and then, without using further paint, brush it out. This will spread the paint evenly over the surface. After brushing out the paint, go over it still another time to remove brush marks. Start at one side and keep the brush moving in one direction until you have reached the end of the freshly painted area. In the center of a large surface, brush from the freshly painted area toward that already finished, gradually lifting the brush from the surface. This will cause the paint to flow together, and overlaps will not be noticeable. Pay particular attention to places where there are joints, such as around sash or where clapboards meet, and work in plenty of paint with your brush so that all surfaces involved are covered. However, do not forget to brush paint out here as elsewhere, or the paint may flow out of the cracks and unsightly runs will appear. Paint in cracks will be good insurance against the entry of any water behind the paint film.

It is easier to use good paint and easier to apply it on a smooth, clean surface, so don't be lured by a low price when buying your paint. And don't paint your house the "easy" way—over dirt and rough spots. If you do, paint failures almost surely will follow, and this means more expense—and more work for you!