The proper plan is to begin on one side of the room, lay one course of boards with the tongue next to, and neatly fitted to the wall (or studding, if a frame house), and be sure the boards are laid perfectly straight from end to end of the room and square with the walls. Then nail this course firmly to the sleepers, through and through, one nail near each end of the board on every sleeper, and you are ready to begin to lay a floor.

Next, fit the ends and lay down four or six courses of boards (owing to their width). If the boards differ widely in color, as is often the case in pine, do not lay two of a widely different color side by side, but arrange them so that the deep colors will tone off into the lighter ones gradually. Push the tongues into the grooves as close as possible without pounding with a hammer, or if pounding is necessary take a narrow, short piece of flooring, put the tongue in the groove of the outer board, and pound gently on the piece and never on the flooring board. Next, adjust your clamps on every third sleeper and at every end joint, and drive the floor firmly together by means of wedges. Drive the wedges gently at the start and each one equally till all the joints fill up snugly, and then stop, for if driven too tight the floor will spring up. Never wedge directly against the edge of the flooring board, but have a short strip with a tongue on it between the wedge and the board so as to leave no bruises. Then fasten the floor to the sleepers by driving a flat-headed, steel wire nail of suitable size, one inch from either edge of every board, straight down into each sleeper. At the end joints smaller nails may be used, two nails in board near the edges and as far from the ends as the thickness of the sleeper will permit. Proceed in this manner until the floor is completed and you will have a floor that will remain tight and look well until worn out.

Such minute directions for so common and simple a job sound silly, but are justifiable from the fact that there are so many alleged carpenters who either do not know how, or are too lazy, to lay a floor properly.—*Southern Lumberman.*

FINISH FOR REDWOOD.

A prominent dealer in redwood supplies the following formula and directions for treating redwood finish. We understand it is a practice that has been indorsed by successful experience in San Francisco. Take 1 quart spirits of turpentine, add I pound corn starch, add ¼ pound burnt sienna, add 1 tablespoonful raw linseed oil, add tablespoonful of brown japan. Mix thoroughly, apply with a brush, let it stand say fifteen minutes, rub off all you can with fine shavings or a soft rag, then let it stand at least twenty-four hours that it may sink into and harden the fibres of the wood; afterward apply two coats of white shellac, rub down well with fine flint paper. then put on from two to five coats best polishing varnish; after it is well dried rub with water and pumice stone ground very fine, stand a day to dry; after being washed clean with chamois, rub with water and rotten stone, dry, wash as before; clean and rub with olive oil until dry. Some use cork for sandpapering and polishing, but a smooth block of hard wood like maple is better when treated in this way. Redwood, according to a Californian's idea, will be found the peer of any wood for real beauty and life as a house trim or finish.

AN EXCELLENT WHITEWASH.

A whitewash for indoor work is made of two pounds of Paris whiting, one ounce white glue; dissolve the glue in warm water. Mix whiting with warm water; stir in glue, and thin with warm water.

ON CERTAIN SURFACES FEEBLY SENSITIVE TO LIGHT.*

BY J. W. OSBORNE.

The specimens which accompany this statement are suggestive, inasmuch as they tend to illustrate the widely extended range of photo-chemical action and the part it plays in everyday phenomena. In thinking and speaking of substances sensitive to light, photographers and others are apt to remember only the haloid salts of silver, chromic acid under restraint acting on organic matter, asphaltum, and a few salts of iron and platinum, which short catalogue does, in fact, include all the sensitive bodies used in practical photography.

But as everyone knows, this list may be indefinitely extended (if the degree of sensitiveness be disregarded), and the accompanying specimens serve to show such extension in certain directions. Broadly, the results should not be regarded as new, though in the manner of their preparation and presentation some novelty may be claimed for them.

On sheets Nos. 1 and 2, three samples of colored commercial paper will be found which are bleached by light, and which give, therefore, a negative when exposed under a negative. On sheets 2 and 3, exposed papers colored for the purpose with eosine and methyl violet are exhibited, which likewise establish the fact that these colors under the luminous influence give rise to colorless compounds. But, though a great number of colors used in the arts are bleached by light more or less rapidly, this is by no means a universal rule. On sheet No. 1, a small piece of commercial orange paper is shown, part of which has been darkened by exposure. Specimens of paper colored with picric acid will also be found on sheet No. 4, in which the darkening to a brown is very marked.

The duration of the exposures required to produce these photographic effects is very considerable when the change is carried to its maximum, varying from twenty to thirty-five or forty hours in direct light, which was the only kind of exposure employed in these experiments. Such substances are perhaps from four hundred to eight hundred times less sensitive than chloride of silver paper. Indications of photo-chemical action are, however, visible in much less time. On sheet No. 2, a piece of eosine paper exposed under two strips of black lace shows a faint positive after half an hour. Also on sheet No. 3, a piece of methyl violet paper similarly exposed shows the gradually increasing strength of the positive (by contrast) after one, two, and three hours.

The fact that printing and writing papers become brown by age is familiar to most persons, but that this change is essentially photographic is not a common belief. On sheet No. 5 will be found pieces of newspaper taken from the New York *Tribune*, the Baltimore *Sun*, and the Washington *Evening Star*, on which photographic images have been impressed by simple exposure under a dense negative. These papers were subjected to no preparatory treatment, establishing the fact that the newspapers we read daily are (probably all) printed on papers sensitive to light and adapted for the production of positive pictures. On sheets Nos. 6, 7, 8 and 9, such pictures will be found on *Evening Star* paper, made by direct exposure to the sun's rays, under collodion negatives. A fact of some significance is that some of the experiments on *Evening Star* paper were made on sheets which had been very carefully washed before exposure. The washing was

* Presented before the Society of Amateur Photographers of New York.