

Bleaching, *n.* The act or art of whitening, especially cloth. — (*Chem. and Manf.*) This process consists in a series of operations, by which the natural colors of various substances are discharged so as to whiten them. It is effected either by the action of various solvents, aided by exposure to light, air, and moisture, upon the bleaching-ground; or by the aid of chlorine. Cotton is more easily bleached than linen, in consequence of its being originally whiter, and having a less powerful attraction for the coloring-matter. In bleaching these goods upon the old principle, warm water is first liberally applied to remove the weaver's paste or dressing; they are then *bucked*, or boiled in a weak alkaline lye; and after having been well washed, are spread out upon the grass, so as to be freely exposed to the joint agencies of light, air, and moisture; the bucking and exposure are alternately repeated as often as necessary; the goods are then *soured*, that is, immersed in water slightly acidulated by sulphuric acid; lastly, they are very thoroughly washed and dried. By these operations the texture of the goods is to a certain extent impaired, and much time is required to complete the process, which cannot be carried on in the winter months. But the exposure upon the bleaching-ground is now to a great extent discontinued; and the same effect is obtained, after the process of bucking, by the action of weak solutions of chlorine or of chloride of lime, which, if skilfully used, can scarcely be said to injure the goods more than the long continued exposure. The theory of bleaching has not been satisfactorily developed; but, from such experiments as have been made in reference to it, it appears to be a process of oxidization, and to depend upon some peculiar influence of nascent oxygen, or perhaps of ozone, upon the coloring-matter. — The color of manufactured wool depends partly upon its own oil, and partly upon the applications made to it in the loom. These are got rid of in the fulling-mill by the joint action of fuller's earth and soap; the cloth is then well washed and dried, and is tolerably white. If the slight yellow tint which it retains is objectionable, it is improved by adding a little stone-blue to the washing-water, or by exposure to the fumes of burning sulphur; this latter method, however, renders it more harsh, and if afterwards soaped, its yellowishness returns. The color of raw silk depends upon a natural yellow varnish, which is got rid of by boiling it in white soap and water, and by repeated rinsings. Certain articles of woven cotton, such as stockings, are bleached as usual, and finished by the action of sulphurous acid, or the fumes of burning sulphur. Straw is also whitened by a similar operation, and hence bleached straw hats are apt to have a disagreeable sulphurous smell.