HOW TO REMOVE SPOTS AND STAINS FROM WOVEN FABRICS.

Taking out grease and other spots from clothes is an application of chemistry which has a practical interest for everybody. It demands a certain acquaintance with solvents and reagents, even though we may not understand the laws of chemical affinity on which their action depends. The general principle is the applying to the spot a substance which has a stronger affinity for the matter composing it than this has for cloth, and which shall render it soluble in some liquid so that it can be washed out. At the same time it must be something that will not injure the texture of the fabric or change its color. The practical hints we shall give are condensed from a variety of foreign sources.

The best substances for removing grease or oil are: 1. Soap. 2 Chalk, fuller's-earth, steatite, or "French chalk." These should be merely diffused through a little water to form a thin paste, which is spread upon the spot, allowed to dry, and then brushed out. 3. Ox-gall and yelk of egg, which have the property of dissolving fatty bodies without affecting perceptibly the texture or colors of cloth. The ox-gall should be purified, to prevent its greenish tint from degrading the brilliancy of dyed stuffs, or the purity of whites Thus prepared it is the most effective of all substances known for removing this kind of stains, especially from woollen cloths It is to be diffused through its own bulk of water, applied to the spots, rubbed well into them with the hands till they disappear, after which the stuff is to be washed with soft water. 4 The volatile oil of turpentine This will take out only recent stains, for which purpose it ought to be previously purified by distillation over quicklime.

An earthy compound for removing grease-spots is made as follows. Take fuller's-earth, free it from all gritty matter by elutriation with water; mix with half a pound of the earth so prepared, half a pound of soda, as much soap, and eight yelks of eggs well beaten up with half a pound of purified ox-gall. The whole must be carefully triturated upon a porphyry slab; the soda with the soap in the same manner as colors are ground, mixing in gradually the eggs and the ox-gall previously beaten together. Incorporate next the soft earth by slow degrees, till a uniform thick paste is formed, which should be made into balls or cakes of a convenient size and laid out to dry. A little of this detergent being scraped off with a knife, made into a paste with water and applied to the stain, will remove it.

Tar and pitch produce stains easily removed by successive applications of spirits of turpentine, coal-tar naphtha, and benzine. If they are very old and hard, it is well to soften them by lightly rubbing with a pledget of wool dipped in good olive-oil. The softened mass will then easily yield to the action of the other solvents Resins, varnishes, and sealing-wax may be removed by warming and applying strong alcohol. Care must always be taken that, in rubbing the material to remove the stains, the friction shall be applied the way of the stuff, and not indifferently backwards and forwards.

Most fruits yield juices which, owing to the acid they contain, permanently injure the tone of the dye; but the greater part may be removed without leaving a stain, if the spot be rinsed in cold water in which a few drops of aqua ammonia have been placed, before the spot has dried. Wine-stains on white materials may be removed by rinsing with cold water, applying locally a weak solution of chloride of lime, and again rinsing in an abundance of water. Some fruit-stains yield only to soaping with the hand, followed by fumigation with sulphurous acid; but the latter process is inadmissible with certain colored stuffs If delicate colors are injured by soapy or alkaline matters, the stains must be treated with colorless vinegar of moderate strength.

Fresh ink and the soluble salts of iron produce stains which, if allowed to dry, and especially if afterwards the material has been washed, are difficult to extract without injury to the ground. When fresh, such stains yield rapidly to a treatment with moistened cream of tartar, aided by a little friction, if the material or color is delicate. If the ground be white, oxalic acid, employed in the form of a concentrated aqueous solution, will effectually remove fresh iron-stains. Acids produce red or other stains on the vegetable colors, except indigo. If the acid has not been strong enough to destroy the material, and the stains are fresh, the color may generally be restored by repeated soakings in dilute liquor ammonia, applied as locally as possible. Photographers frequently stain their clothes with nitrate of silver. The immediate and repeated application of a very weak solution of cyanide of potassium (accompanied by thorough rinsings in clean water) will generally remove these without injury to the colors.

HOW COLDS ARE CAUGHT.

(From the *British Medical Journal*.)

There are several well-known processes by which a cold may be caught. As a disease, there is nothing so common; and yet it is only very recently that anything like an approach to a knowledge of its pathology has been attained. There is now, however, a large accumulation of evidence which points very strongly in the direction that "taking cold" is actually "being cold."

Rosenthal has very carefully investigated the relations of the body heat, and has demonstrated the existence of a central heat producing area, and an external heat-radiating surface. A rise in temperature is due to the disturbance of the balance normally existing betwixt these two antagonistic areas. An excessive heat-production may produce fever; or this may be due to an impairment in the cooling processes, so that heat accumulates. Precisely the opposite of this leads to a lowering of the body-temperature; if the heat be lost more rapidly than it is produced, then a "chill" results.

Let us see how this applies to colds, so frequently caught from a wetting. The clothes we wear are good non-conductors of heat, and so prevent the loss of body-heat which would occur without them. But let them become moist or saturated with water, and then they become heat-conductors of a much more active character, and a rapid and excessive loss of body-heat follows. Nothing is more certain, however, than that prolonged exposure in wet clothes is commonly followed by no evil results; that is, so long as there is also active exercise. The loss of heat is then met by increased production of heat, and no harm results But let the urchin who has been drenched on his way to school sit in his wet clothes during school-hours, and a cold follows. No matter how inured to exposure the person may be who, when drenched, remains quiet and inert in his wet clothes, he takes a cold. Here there is an increased loss without a corresponding production of heat, and the temperature of the body is lowered, or the person "catches cold."

The effect of exercise in producing heat is well known. Unless the surrounding air be of a low temperature and the clothes light, the skin soon glows with the warm blood circulating in it, and then comes perspiration with its cooling action. Here there is a direct loss of heat. Exercise, then, in wet clothes, produces more or less a new balance, and obviates the evil consequences which would otherwise result.

The loss of heat is more certainly induced if the skin be previously glowing and the circulation through the skin, the cooling area, be active. Thus a person leaves a ball-room with his cutaneous vessels dilated, and a rapid loss of body-heat follows, unless there be a thick great coat or a brisk walk; if the clothes become moistened by rain or be saturated with perspiration, the radiation of heat is still more marked. Such is the causation of the cold commonly caught after leaving a heated ball-room. It is probable that exhaustion is not without its effect in lowering the tonicity of the vessels, and so those of the skin do not readily contract and arrest the loss of heat.

Rosenthal found that a rabbit exposed to a temperature of 100 deg. Fahr., for some time had a lowering of the body-temperature of no less than 2 deg. for two or three days afterwards. The dilated cutaneous vessels had not sufficiently recovered their tone to contract and arrest the loss of heat. Those who live in superheated rooms readily take cold on exposure. There exists a condition of the cutaneous vessels which gives a tendency to lose heat, and less exciting causes will induce a cold.

A damp bed gives a cold, because the moist bed-clothes are much better conductors of heat than are the same clothes when dry. The temperature of the body is lowered, and a cold results. Long exposure in bathing leads to similar consequences. The second feeling of cold in bathing tells that the body is becoming chilled, and that the production of heat is insufficient to meet the loss. A run on the river bank,