mains on the paper, the hyposulphite of soda will dissolve some portions of it, and thus injure the picture. This is shown by the more energetic action of the hyposulphite on the positive than on the negative pictures. In the latter, by the action of the Gallic acid, or the protosulphate of iron, the complete deoxidation of the silver salt is effected. In the former, this is not the case where the exposure to sunshine has been short, or where the copy has been made by the effect of diffused daylight.

Positive photographs which are made when the sun is shining brilliantly, are far less liable to injury than such as are procured by the weak and uncertain light of a wintry day, although they may in both cases be brought to the same apparent degree of darkness.

2. As a general rule, it is advisable to expose the positive to sunshine longer than it is necessary to do, for the production of a well-defined image. If the picture has been rendered *far too dark* to be pleasant, it can be *toned* back, to use an artistic phrase, by very weak solutions of the iodide or cyanide of pottassium.

3. The photograph being removed from the copying frame, or the camera, should be first placed in some clean water, to which a small quantity of common salt has been added. By this all the free nitrate of silver is converted into a chloride; and the formation of any sulphuret of silver in the paper, by the action of the nitric acid on the sulphur salt, prevented. The picture should, after it has soaked for a little time, be removed and placed in a solution of the hyposulphite of soda, in a flat dish—about an ounce of that salt being dissolved in a quart of water—it should remain in this fluid for five or ten minutes, and then be removed to a vessel of perfectly clean water.

4. It is thought by many photographers that the addition of some chloride of silver to the hyposulphite of soda prevents its acting on the more delicate shadows of the picture. Whether this is the case or not, is somewhat uncertain; but the hyposulphite solution can be used a great many times, if after using it is poured back into a bottle, and kept from the air.

5. It becomes necessary now to remove every trace of the hyposulphite of soda and silver from the paper. Many persons are content with soaking their pictures; but by far the best practice is, to place the photographs upon a flat board, incline it to an angle of about 45°, and allow water slowly to fall upon and flow off from the pictures. By this means the salt is removed far more rapidly than by soaking and changing the water, howsoever carefully this may be done. Even after this the safest course is, to place the photograph in some clean hot water, to which a little potash has been added. This secures the removal of the last trace of the hyposulphite, and it darkens again those lines of the photograph which may have been injured by chemical action, as above described.

6. By attention to these details photographs may be fixed most permanently, without their undergoing any serious injury. The addition of neutral chloride of gold to the hyposulphite of soda bath, tends to produce a variety of purples approaching almost to black, which are of a very pleasing character. Similar results may be obtained by soaking the picture in a weak solution of the chloride of gold, upon removing it from the fixing fluids.

7. The experience derived from the photographs displayed at our late Photographic Exhibition, some of which have since been presented to the Society, convinces us that sufficient care is not generally given to secure the perfect permanence of a fine positive photograph. By the combined influence of a moist atmosphere and light, changes slowly go on from the edges of the paper spreading inwards, which eventually destroy the picture, if there is the slightest trace of the hyposulphite of silver allowed to remain on the paper. The taste is the best test that we can apply; and if after a picture has been well washed in several perfectly clean waters, we take one corner of it into the mouth and suck out some of the water, without discovering any metallic sweetness, we may be sure that our photograph will endure as long as any ordinary print.—*Journal of the Society of Arts*,

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"On the nutritive value of the food of Man under different conditions of age and employment." By Dr. L. Playfair

The great importance of an attentive consideration to the kinds of food taken under different circumstances becomes evident when it is known that one class of substances supplies the fuel that maintains the heat of the body, and other substances supply the materials that form the flesh and the bones. The lungs act as a furnace, in which the process of slow combustion is always going on by the absorption of oxygen from the air into the blood and the exhalation of a portion of it, in combination with the carbon of that fluid, in the form of carbonic acid. It was stated by Dr. Playfair that the weight of oxygen absorbed by a man in this manner in a year, averages 700 lbs., and that the consumption of carbon during the process is so rapid that in the course of three days all the carbon in the blood would be exhausted, if it were not renewed by a supply of proper food. As the temperature of the body is always the same under every climate, the inhabitants of the colder regions of the earth require a larger amount of food containing carbon than those who live further south, to maintain the heat at its requisite standard. Fire and warm clothing diminishing the want of heat-producing food, therefore it becomes a question, in an economical point of view, whether it is not cheaper as well as better to keep paupers and others who are supported at the national cost, well clothed and in warm rooms, and thus to supply externally by low-priced fuel a portion of the animal heat that would otherwise have to be maintained by the more costly fuel supplied to the stomach as heat-producing food. The substances that contain the greatest amount of carbon are those which best supply heat; among these sugar and rice are prominent; whilst the flesh-giving substances are those that contain nitrogen—meat, peas, and cheese, being the most abundant sources. As different kinds of solid food produce different effects in the nutriment of the body, it is requisite in a well-regulated dietary that the proportions of flesh-giving and heat-producing food should be properly adjusted, taking into consideration age, employment, and climate. The regulations for dieting sailors exhibited, at one time, great ignorance of this requisite attention, and in the dietary equivalents of the navy in some instances, heat-producing food was substituted almost to the exclusion of flesh-giving food, all kinds of solid nutriment being ignorantly considered to operate in the same manner. Dr. Playfair noticed at considerable length the difficulty in obtaining accurate statistical statements of the dietaries of different classes, but he nevertheless exhibited numerous diagrams, representing, by differently coloured lines of various lengths, the respective quantities of food of both kinds allowed to soldiers, sailors, paupers, and prisoners in this and other countries. He pointed out strongly the facts which had come to light during Mr. Chadwick's investigations respecting the relative quantities of nutriment of agricultural labourers and prisoners. From this it appeared that whilst the agricultural labourer had a scanty allowance, scarcely sufficient to maintain vigorous life, the suspected thief was sufficiently fed, the convicted thief was still better treated, and when he arrived at the dignity of a transported convict, he has double the allowance of the hard-working labourer. Dr. Playfair mentioned a curious fact,