

Correspondence.

A Standard Measure.

To the Editor of the Scientific American:

I read in old times that kings and other rulers had great trouble in finding a permanent measure for the yard or foot. Some used their own foot, others a stick, others a certain millionth number of the meridian. I suggest the following idea for a permanent measure for the inch: Take a plain mirror, on the equator, at noon, on any certain day, and get the size of the sun's disk, which will be about an inch. This will be the same size on any meridian around the globe at noon on the same day, and unchangeable. I would like to hear from some of your many intelligent readers on this subject.

F. M. SHIELDS.

Coopwood, Miss., Sept. 12, 1886.

"Saltpetering" in Stone.

The actions capable of affecting the stability of the composition of ordinary building stones, by reason of the new forms of matter they superinduce, may principally be considered to be those resulting from the absorption of the gases of the atmosphere, and especially the extraordinary process known by the name of "saltpetering," or, more correctly speaking, of nitrification. This process displays itself in the formation of minute crystals, efflorescing from the interior to the exterior of the stone, and it leads to the destruction of the exposed surfaces of the latter, through the gradual removal of the minute particles, in consequence of the disintegration produced by an expansive action of the crystals in process of formation.

It is supposed that the organic matter diffused through nearly all stratified deposits gives rise to the formation of certain nitrates (such as the nitrate of lime or the nitrate of soda) under the influence of damp and of air, and of light of certain descriptions—for nitrification certainly takes place most abundantly near damp ground, rising in a wall *pari passu* with the range of the capillary attractions of its materials, and upon the northern or shaded faces of the said walls. Not only does this nitrification throw off the minuter and less adherent particles of the building materials themselves, whether they be stone or brick, but it is also able to detach any protecting coat which may be put upon them, if the adhesion of that coat to the subjacent material should not be of a very energetic nature.

Let the adhesion, however, be ever so energetic, if once the action of nitrification should have been established it must run its course, and the amount of evil it is capable of producing will simply depend upon the quantity of organic matter originally contained in the materials or susceptible of being absorbed by them from the atmosphere. The secondary limestones which have not been affected by plutonic action, the loamy clays, some kinds of pit sand, sea sand, and some descriptions of natural cements, are particularly exposed to the danger of nitrification in damp positions; and whenever it is once established, it is in vain to expect to be able to preserve any mural paintings, or even any sculpture of a delicate character. It is also to be remarked that nitrification will frequently take place in the most dangerous manner precisely in those materials whose exposed surfaces are covered with coatings impervious to the air; and that in houses or buildings of that character it is most energetic on the interior faces of the walls, or precisely on those which are the least exposed to the atmosphere. In fact, it is mainly in consequence of the absorption of moisture by the building materials, and of the chemical changes thus produced in the organic matter those materials may contain, that the peculiar form of decay which accompanies "saltpetering" arises.—G. R. Burnell.

Dr. Abernethy's Prescription for a Dyspeptic.

General John A. Dix was at one time the unhappy victim of dyspepsia. After seeking in vain for relief, he was at length led to consult the famous Dr. Abernethy. After listening impatiently to his story, Abernethy interrupted him with these words:

"Sir, you are pretty far gone, and the wonder is that you are not gone entirely. If you had consulted common sense instead of the medical faculty, you would probably have been well years ago. I can say nothing to you excepting this: You must take regular exercise, as much as you can bear without fatigue, as little medicine as possible, of the simplest kind, and this only when absolutely necessary, and a modest quantity of plain food, of the quality which you find by experience best to agree with you. No man, not even a physician, can prescribe diet for another. A stomach is a stomach, and it is impossible for any one to reason with safety from his own to that of any other person. There are a few general rules which any man of common sense may learn in a week, such as this: That rich food, high seasoning, etc., are injurious. I can say no more to you, sir; you must go and cure yourself."

It is needless to say that General Dix was rewarded by restored health and a good old age.

PHOTOGRAPHIC NOTES.

Varnish for Gelatine Plates.—Mr. W. M. Ashman, in the *Photo. News*, recommends the following as a good, rapidly drying varnish for gelatine negatives, which does not require the application of artificial heat. The mixture consists of ordinary gold oil size, such as can be purchased for adhering gold leaf to glass, and pure benzole, free from grease, in equal volumes. Gelatine negatives coated with this mixture become surface dry in a few minutes, and dry enough in half an hour for printing or retouching.

The varnish does not become tacky when exposed to the sun's rays, and is practically insoluble.

The gold size is readily obtained almost anywhere; but if it is desired to make it, the following is the formula: Picked amber or copal, 1 part; linseed oil, 2 parts; boil until it strings well, then add to 6 parts of boiling and very drying boiled oil. Boil the whole together until it strings well, then dilute with 10 to 12 parts of old turpentine.

Hints on Making Paper Negatives.—We find reported in the *Photo. News* a concise summary of the advantages of paper over glass in making negatives, as stated by Mr. J. H. Pickard before the Birmingham Photographic Society. The paper employed was that furnished by the Eastman Dry Plate and Film Company. He says:

I will just point out the different advantages the film negatives possess over glass negatives.

Portability, both in storage and weight; 250 paper negatives can be packed in a single inch of thickness, and will weigh less than twelve glass negatives. I may mention how much handier they are for postage, etc. They never break.

Breakage in Printing.—Sometimes you break a glass negative by extreme pressure. In the case of paper negatives, this can never occur; any amount of pressure may be obtained. Here is an unfailing remedy for blurred prints.

Halation.—You are perfectly free from this, as the only reflecting surface is in direct contact with the film (viz., the paper). The interior of churches, etc., may be taken with the lens pointing to the east window, getting every line and pane perfect, no matter how long the exposure may be. I have taken landscape with the trees, etc., against a bright sky, and the sharpness has been remarkable.

Speed.—I consider this to be much faster than the glass, and quite equal to instantaneous work, and can assure you that if we could only get the same emulsion on glass as Eastman gives us on the paper, we should obtain the *par excellence* of pictures.

Dust Spots.—These you do not get, if you only wind on another piece just before you expose; and of course, after you have taken the picture, whatever dust accumulates does not matter, as a careful developer always looks to this.

Easy Development.—The company give a formula for potash and soda, but I always use my favorite developer, Beach's. The paper is simply soaked in water till limp, the developer poured on, and the image, with a properly exposed picture, appears in from ten to twelve seconds. The method of development I will demonstrate to you further on. In some cases slow, weak development gives the finest results. Time can be saved by developing two or three at the same time, but I do not recommend this for amateurs.

Fixing.—This is done with a similar hypo solution as used for glass:

Hypo.....	4 ounces.
Water.....	1 pint.

But care must be taken by looking through the negatives to notice any unfixed portions, which will look dull against those fixed, which are clear. When fixing I wash them for about a minute or two under the tap, and then place them in a bath of alum, hydrochloric acid, and water.

Saturated solution of alum water.....	2 ounces.
Hydrochloric acid.....	1 ounce.

This bath, in a few seconds, clears, or rather bleaches, the whites, and renders the picture very apparent and distinct. Wash in four or five changes of water, or, better still, as I have done lately, put them face downward in a tub of water, and change the water in about an hour's time. This way was mentioned in my hearing by Mr. A. L. Henderson at the Derby Convention.

Drying.—Lay them down, while wet from water bath, on a sheet of ebonite, put a sheet of blotting paper over, and squeeze down (some recommend glass rubbed with French chalk, but with this they have a nasty habit of sticking and spoiling a negative). When dry, which will take six or eight hours, you can easily peel them off with thumb and finger.

Retouching and Spotting.—In this you save time, as no grinding or varnishing is required, and it is much simpler than on glass; it can be retouched on both sides. I have done but little myself, but friends who do retouch say how much pleasanter the surface is to work on than the glass.

Printing.—To print quickly, so they say, you must oil them. My advice is, don't do anything of the sort. Oil vaseline is recommended by Eastman. I tried it at the beginning of my experience, and not only

spoiled my negatives, but many other things besides, and all those I did get transparent have since become mealy, and wanted doing again before I could print from them, although I kept them in oil paper envelopes. So take my advice, and use them unoled, as I do. The packing and keeping is then cleanly, and a large number can be kept in an empty half plate box. The shortness of time in printing is marvelous, very nearly as quick as the glass. You can print them in direct sunlight, as the paper itself is a light-diffusing medium, and on an ordinarily light day about half an hour is an average time.

Bromide Printing.—The paper negatives, to my idea, are certainly the best negatives for this class of work, some two or three seconds being quite ample time to expose to produce an effective picture; with lamp-light, of course, a longer exposure is needful.

Enlargement.—Personally, I have had little or no practice in enlarging, but will quote the authority of a well-known amateur, Mr. A. Dresser: "I enlarged from both oiled and unoled prints. In enlarging half-plate to 12 by 10, with portrait lens, small stop, two minutes for oiled prints, and four for unoled, is an average time."

Frilling is unknown, since the gelatine seems to keep tight to the paper, notwithstanding its pliability.

Changing is readily done in any dark place, and not unfrequently I have changed by daylight, only spoiling two thicknesses of the paper; here is a great advantage when traveling.

Having now seen the manipulations of the processes required in paper negatives, and trusting I have been able to make them as simple to you as they are to me, I feel sure that any one who takes up the paper negative, with its body guard and servant, the roller slide, will never regret the change, and will be charmed as much as I am with the simplicity, comfort, lightness, and general ease with which amateur photographic picture making is accomplished with the Eastman roller slide.

DECISION RELATING TO PATENTS.

U. S. Circuit Court.—Eastern District of Wisconsin.

CALKINS *et al.* v. OSHKOSH CARRIAGE CO. *et al.*

Dyer, J.

Letters patent No. 261,829, of August 1, 1882, to Alton J. Calkins, for an improvement in carriage bodies, are void for want of novelty.

The patent was for a carriage body having rounded corner posts, with grooves to receive the side and end panels, and tenons to receive side and end rails, and corner irons to hold the rails rigidly to the posts, the whole forming a carriage body ingeniously adjusted and held together without the aid of screws, but all the elements of the claim were old, and in view of the prior state of the art, held that it did not require invention to bring them together.

Although the adjustment of the different parts of patentee's combination was novel, and the combination, as an entirety, useful, held that it exhibited only the expected skill of the mechanic's calling, and not the creative work of the inventor.

TRADE MARK DECISION.

U. S. Circuit Court.—Northern District of Illinois.

LORILLARD *et al.* v. PRIDE.

TIN TAG TOBACCO.

Blodgett, J.

Tin being one of the common metals in use by the public for a very large variety of purposes, and being easily stamped or impressed with letters, figures, or characters, or cut into various shapes, and taking readily different colors or shades besides its natural metallic luster, and, like paper, becoming readily the vehicle or material for receiving whatever impression or color may be stamped upon it, held that the attempt of complainants to appropriate tin to their exclusive use in marking plug tobacco without regard to its color, shape, or the character or letters it bears, is not within the scope and purpose of the law of trade marks.

Complainants having attempted to secure to themselves by means of a patent the exclusive use of tin as a badge for their plug tobacco, and their goods having acquired the name of "Tin Tag" goods while they were acting under their patent, held that when the patent was declared void the right to so indicate or mark such goods became public, and complainants cannot perpetuate or continue this right by claiming it as a trade mark.

The use of arbitrary terms—such as "Tin Tag" or "Wood Tag"—by a manufacturer to indicate goods produced or sold by him might be allowed if the person so using the name or words branded them upon his goods, or in any way gave the goods the name; but that would give no right to the exclusive use of the tin or wood as a material to designate the goods.

SOME one has discovered that a weak galvanic current, which will sometimes cure a toothache, may be generated by placing a silver coin on one side of the gum and a piece of zinc on the other. Pressing the mouth with acidulated water will increase the effect.