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A NEW BRIDGE IN PHILADELPHIA.

The river Schuylkill, at Philadelphia, is becoming renowned for the many handsome structures which cross it. Whatever other attractions the good city of brotherly love may boast, it certainly possesses more beautiful bridges than any other city on this continent. The Market street bridge, recently destroyed by fire, is to be replaced by one of the most solid and ornamental structures in the country. The Girard Avenue bridge, an engraving of which appeared in these columns some time ago, has attained wide celebrity; and a very excellent specimen of modern bridge architecture has recently been completed at Callowhill street, replacing the historic wire bridge, which was one of the earliest suspension bridges in this country. It is from the design of J. H. Linville, Esq., C. E., President of the Keystone Bridge Company, by which corporation the bridge was erected. It consists, as will be seen in our engraving, for which we are indebted to the *Polytechnic Review*, of one span only, 350 feet in length; there is a span of 80 feet over Callowhill street, five arched colonnades on the east side of 105 feet, ten on the west side of 230 feet; a bridge over 30th street of 90 feet; seven spans of plate girders, 300 feet; span over the Pennsylvania Railroad, 140 feet; total 1,295 feet. The upper floor of the bridge is 32 feet above the lower roadway, and is 48 feet wide; the roadway is 52 feet wide, and the sidewalks 8 feet each. The lower floor is 50 feet wide, accommodating a roadway and two sidewalks.

On the eminence on the right of the picture is situated the main reservoir of the Fairmount water works; and descending this hill to the river side, the tourist will pass the structures containing the wheels and the pumps which lift the water from the river and force it up into the reservoir. The wheels are worked by water brought from the dam (which crosses the river just below the hill shown in the center of the illustration) by a canal.

About Scarecrows.

Now that the planting season is at hand, we have no doubt but that many a farmer will rummage through his garret to find the cast-off garments, which, stuffed with straw, are to be set up in the cornfield to warn off the marauding crow. We have never had much faith in this artifice. Crows are possessed of much more wisdom than is generally credited to them; and while an immovable bundle of rags may drive them away for a short time, we believe that eventually they discover the humbug, as we have seen the birds complacently picking up young corn almost within the shadow of an elaborate stuffed scarecrow as ever was erected. We, however, have heard suggested a couple of plans which are calculated to intimidate even the boldest of these birds; and as they are easily carried out, perhaps our farmer readers may make use of them. The first and best is a suspended looking glass. Take two small cheap mirrors, fasten them back to back, attach a cord to one angle, and hang them from an elastic pole. When the glass swings in the wind the sun's rays are reflected all over the field, even if it be a large one; and even the oldest and bravest of crows will depart precipitately should one of its lightning flashes fall on him. The second plan, although a terror to crows, is especially well suited to fields subjected to the inroads of

small birds and even chickens. It involves an artificial hawk made from a big potato and long goose and turkey feathers. The maker can exercise his imitative skill in sticking the feathers into the potato so that they resemble the spread wings and tail of the hawk. It is astonishing what a ferocious-looking bird of prey can be constructed from the above simple materials. It only remains to hang the object from a tall bent pole, and the wind will do the rest. The bird makes swoops and dashes in the most headlong and threatening manner. Even the most inquisitive of venerable hens has been known to hurry rapidly from its dangerous vicinity, while to small birds it carries unmixed dismay.

Singular Explosion.

Mr. J. M. Krapp, foreman at Pioneer Tunnel, St. Louis, Cal., in commenting on our account of the explosion of a bucket of water, published on page 81 of our current volume, states that a similar accident happened in the works under his charge. Cartridges of Hercules powder are there usually stood round a bucket of hot water to thaw them out, as they cannot be exploded when frozen; and a helper put a bucket

A New Mode of Hospital Disinfection.

Dr. John Dougall, of Glasgow, Scotland, has recently made the important discovery that, when organic matter undergoes decomposition in the presence of an alkali, the putrefactive process is induced, and that this takes place much more readily than when organic matter undergoes decomposition in the presence of a neutral substance; but when organic matter undergoes decomposition in the presence of an acid, the fermentative process is induced, accompanied by a not unpleasant moldy aroma and innocuous products. These conclusions Dr. John Day, of Geelong, Victoria, has been led to consider with relation to their bearing upon the outbreaks of pyæmia, erysipelas, and puerperal fever in hospitals, and he reaches the opinion that such diseases may directly be traced to the alkaline walls, alkaline ceilings and alkaline floors (the latter rendered alkaline by soap) with which the patients are environed. Such diseases hitherto, we may remark, have been considered due to ferments in the air, to bad ventilation, to uncleanness, and even to the poisoning of walls by organic effusions; and various plans have been suggested for their prevention, among which were coating the walls with silicate of soda

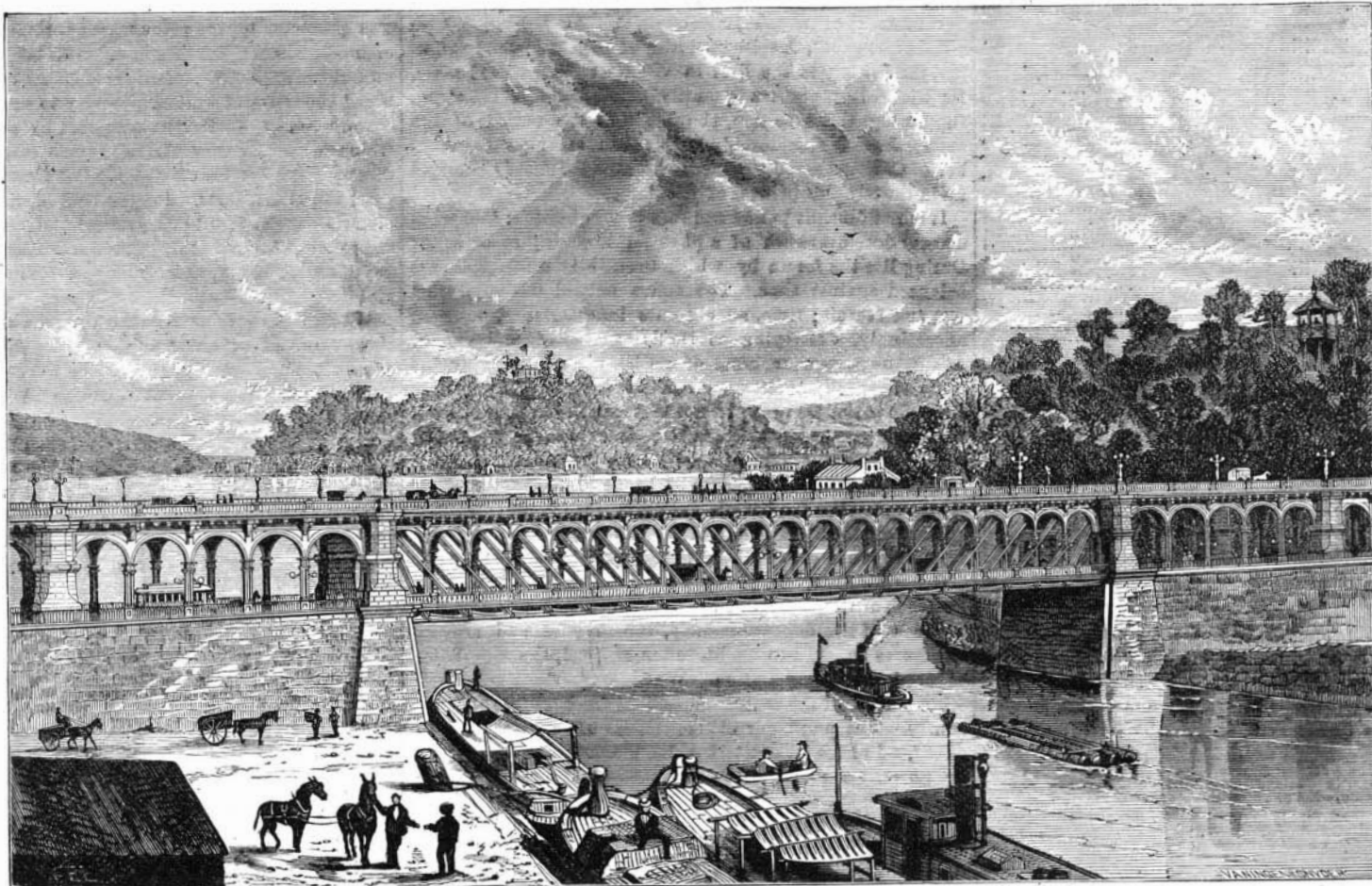
and even with solid sheets of glass.

Dr. Day's plan, however, differs from any yet broached, and we take a description of it from a pamphlet for which we are indebted to him. The philosophy of the method is the generation of peroxide of hydrogen. All substances which spontaneously generate this at the same time require an acid reaction. On the other hand all alkalies destroy peroxide of hydrogen, and, when added to those substances which spontaneously generate it, prevent its formation. Thus it would seem that acids are the natural allies of peroxide of hydrogen, for they are not only simultaneously generated, but

they give it stability and act in concert with it as deodorisers and disinfectants.

In order to generate the peroxide, and at the same time to abolish the alkaline surroundings, Dr. Day proposes to rub hospital walls smooth and coat them with a varnish composed of paraffin and oil of turpentine; or they may be covered with silicate paint and then rubbed down and varnished. The floors he brushes over with equal parts of gasoline and boiled linseed oil, to which a little benzoic acid has been added, and, when dry, polishes them with a thick paste composed of beeswax and turpentine, with benzoic acid added in the proportion of 2 drachms to the pound. Boards prepared in this way, he considers permanently disinfected. The gasoline, linseed oil and oil of turpentine all get imbedded in the wood and generate peroxide of hydrogen; the benzoic acid is added on account of its great power of destroying all the forms of lower organic life, and the wax is of course used for the purpose of combining these substances and affording a polish.

An excellent sedative water for external application, for bruises or aches of any kind, is composed of ammonia 2 ozs., tincture of camphor 2½ drachms, common salt 2 ozs., and water 2 pints. Mix and dissolve without heat. This is largely used in France, and is sold this country under a patent medicine name. It is an excellent liniment for cattle when strengthened by the addition of 10 drachms more ammonia.



ALLOWHILL STREET BRIDGE, PHILADELPHIA, PA.

of cold water (an iron bucket, we presume) on the fire, when a violent explosion took place. It is surmised that a portion of the powder may have adhered to the bottom of the bucket. The former accident may have arisen from a similar cause.

Electricity as an Aid to Egg Hatching.

The *Osterreichische Landwirthschaftliche Wochenblätter* states that Dr. Virson, Superintendent of the Italian experimental silk farm at Padua, has discovered that the hatching of silkworm eggs, of suitable age, may be accelerated by a period of 10 or 12 days, and a yield of at least 40 per cent of silkworm caterpillars secured, by exposing the eggs to a current of negative electricity from a Holtz machine for a space of 8 or 10 minutes. It is suggested that the same method might perhaps prove useful in promoting the hatching of hens' eggs and in hastening the germination of various seeds.—*Quarterly Journal of Science.*

A Solar Phenomenon.

Mr. James Cassidy, of the United States Signal Office, Milwaukee, Wis., reports the occurrence, on March 13, of a remarkable exhibition of parhelia or mock suns, lasting from 2:30 P. M. to 3:10 P. M. The sky was covered with a whitish haze, and the prismatic colors on one of the parhelia were well developed. The other parhelia moved away from the sun in a circular direction towards the west, and continued to do so till it faded away