

# ZOOLOGICAL GARDEN AT FAIRMOUNT PARK, PHILADELPHIA.

Fairmount Park has attained a reputation which is second only to that of Central Park, New York. It contains nearly 3,000 acres, being more than three times as large as Central Park. It is dedicated to be a public pleasure ground forever, and under the management of a Board of Commissioners it is rapidly growing in beauty and interest.

Thirty-three acres of the park have been leased by the Zoological Society, of Philadelphia, which has been so successfully managed that, although but a few years old, its collection is the finest in this country.

The tract of land leased to the Society is that known as "Solitude," and on it stands the ancient house built by John Penn, son of Thomas Penn, and grandson of William Penn, and owned by his descendants until purchased by the Park Commissioners.

No expense has been spared to perfect the garden in every particular, and it is fitted in a manner best suited for the maintenance and exhibition of birds and animals.

The Society intends establishing here a zoological garden, second to none in the world, and is rapidly carrying out its designs. It has agents in every part of the globe from whom it receives frequent shipments of rare and interesting specimens of natural history.

We present herewith engravings of the Girard Avenue Entrance, the Restaurant, and the Elephant House, which are all substantial buildings and fine specimens of architecture.

## Solubility of Cotton.

In my operations in carbon photography, and with dry collodion, in which films of normal collodion are employed, I have used, with some advantages, ordinary cotton in solution in ammonia at 22°, containing fifteen per cent of hydrated carbonate of copper.

In the rapid albumen dry process it is necessary, before applying the albumen to the plate, to cover it with collodion, which forms a kind of spongy felt, capable of retaining a greater quantity of albumen and of equalizing the film.

The soluble cotton prepared by me, according to the directions of Major Turainne, has given me satisfactory results. It is not so easily used as the alcoholized ether collodion, but it costs much less. I prepare it in the following manner: In ammonia at 22°, containing fifteen per cent of hydrated carbonate of copper, after the reaction has ended I add to the liquid (in small quantities) ordinary cotton, free from greasy matter, such as is used for the preparation of pyroxylin; I agitate, and after solution I filter through asbestos, or I decant after repose in a glass-stoppered bottle, as this product is

highly caustic. If we desire to obtain a cotton adhering more strongly to the plate, or opaline films, add to the caustic solution a little resin.

To cover a plate, I collodionize in the ordinary manner, and when the coating is thoroughly dry I immerse the plate in a dish of water acidulated with azotic acid. The blue

print produced by the copper salt rapidly disappears, and a few washings suffice to leave on the surface of the plate, after thorough drying, but a highly adherent coating of pure cotton. The coating of cotton, after the last washing, while still wet, may be covered with albumen, or the plates may be prepared beforehand and again wet before albumenizing.

The coating may also, after the final washing, be covered with iodo-bromide solution, allowed to dry or drained only, and then plunged into the silver bath. The plates thus prepared are very sensitive.

Seen under a magnifying glass, the tissue formed by ordinary cotton is precisely like that produced by emulsions. The ammoniacal solution of copper has been known for a long time as a solvent of cotton, and I am surprised that this property has not been already utilized in photography, as I believe it susceptible of many applications.—*Ernest Boivin, Moniteur.*

## Phosphor Bronze.

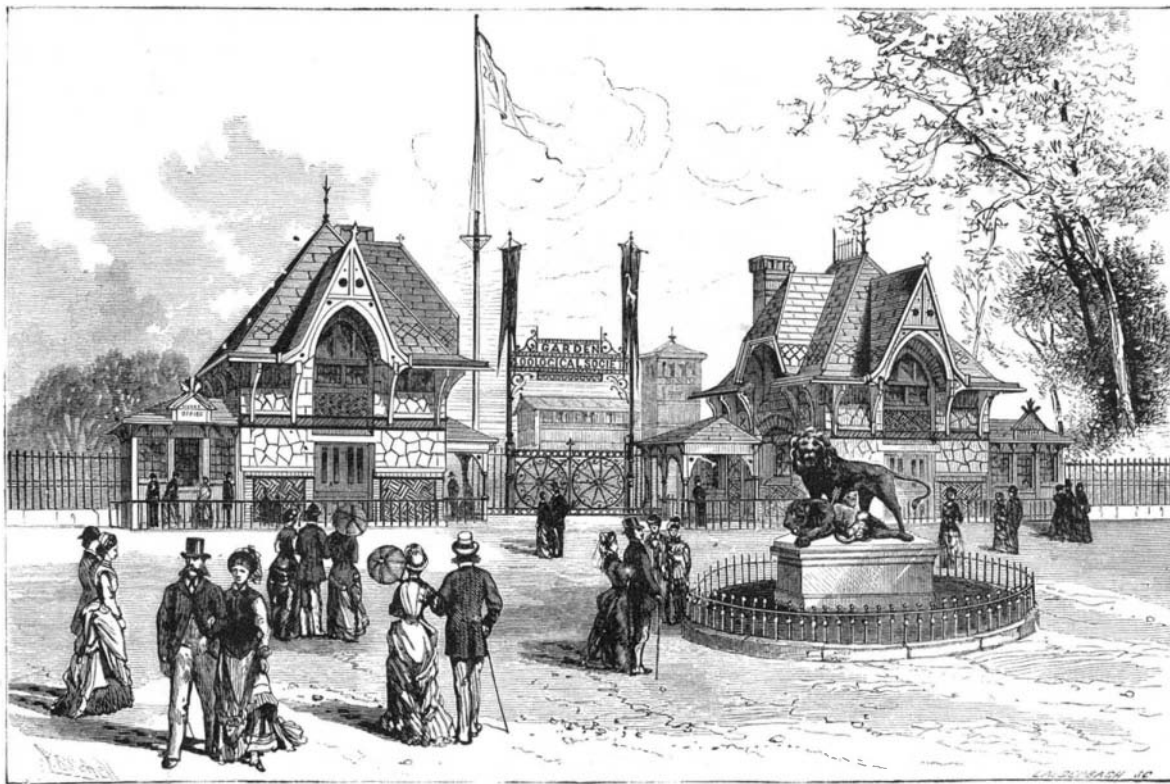
The superior durability of phosphor bronze over other material for bearings, slide valves, and various other purposes where hardness and toughness are requisite is strikingly illustrated in an exhibit at the Paris Exposition, wherein are shown many bearings, etc., of the bronze side by side with those of other metals with which they had been used in competitive tests. Bronze bearings used for finishing rolls in a rail mill show very slight wear for eight months of constant work, while gun metal bearings on same rolls wore out in three weeks.

Bronze bearings were used on one side and gun metal on the other of crushing rolls, making 120 revolutions a minute, with a pressure upon them of 2½ tons; the first showed scarcely a sign of wear, while the latter were completely worn out.

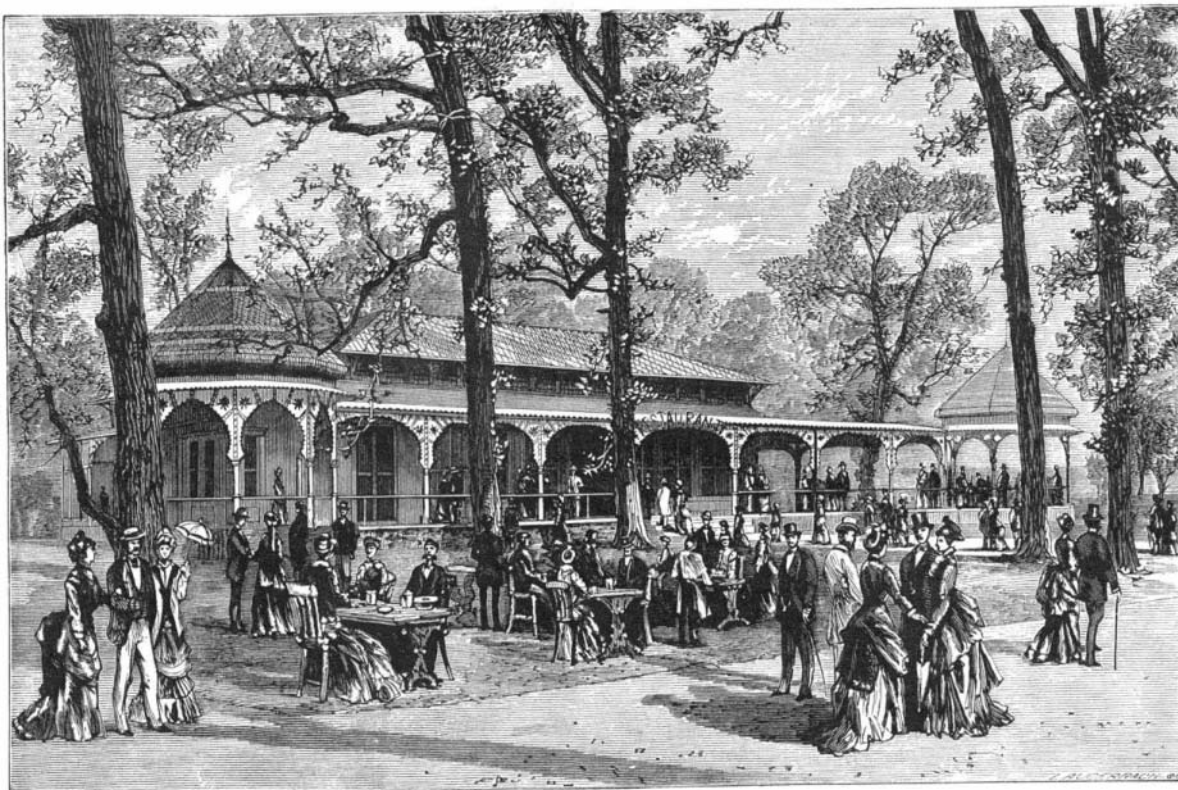
But the most remarkable instance is that of locomotive slide valves, which, though in use for twenty-two months, have required no attention in the repair shop and have worn but ⅛ of an inch, while the life of ordinary gun metal slides averages but eight months; and the cylinder faces on which the valves slide were not worn in the least. At this rate of wear the life of the bronze valves would be from seven to eight years.

It is evident that in the phosphor bronze we have an agent for very materially reducing the "repair account" on our railroads and in our manufacturing—a most welcome matter in these times.

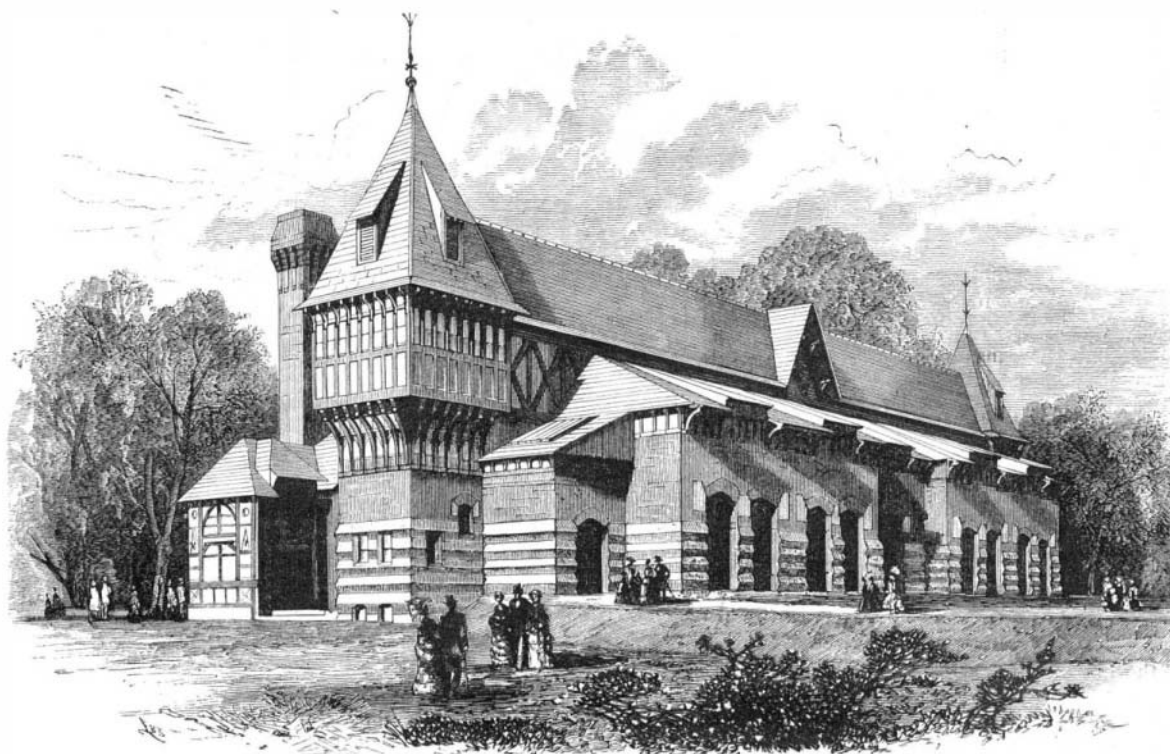
**A DEEP GAS WELL.**—Operations on the Tarentum oil well, near Pittsburgh, were lately stopped. The well is down some 2,800 feet, at which depth no oil was obtained, but a good supply of gas has been secured, sufficient to run any large manufacturing establishment.



GIRARD AVENUE ENTRANCE.



THE RESTAURANT.



THE ELEPHANT HOUSE.