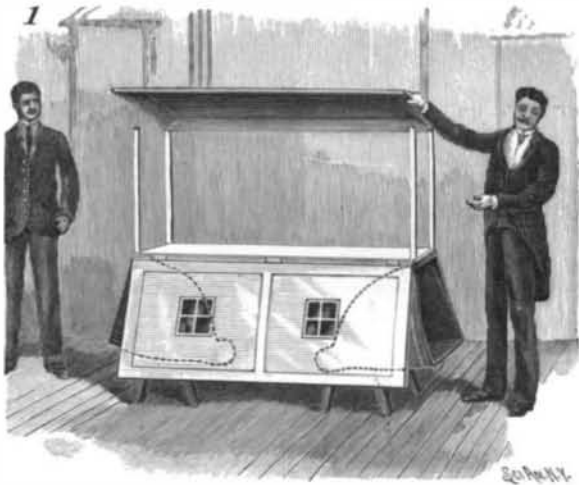


"AFTER THE FLOOD" AT THE OLYMPIA.

At the Olympia Music Hall, in this city, a very clever performance in the order of natural magic has been exhibited, with whose true inwardness our readers may desire to be acquainted. In the production of a really good illusion, scientific interest is often involved, and



THE ARK OPENED FOR INSPECTION.

the details have to be complete and perfect to obtain favor with the court of last resort—the public.

The curtain rises and shows upon the stage what is to be interpreted as a representation of Noah's ark, a rectangular box with ends added to it, which, curving upward, give it a boat-like aspect. It stands upon two horses or trestles. The central cut, Fig. 3, shows the ark in its entirety. The exhibitor opens it on all sides, swinging down the ends and the front and back lids, and raising the top as shown in Fig. 1. It will be noticed by the observant spectator that the back lid is first dropped and that the assistant helps throughout, the reason of which will be seen later. The skeleton or frame of the structure is now disclosed and it is seen to be completely empty. It is now closed, this time the back lid being swung into place last, and all is ready for the flood. This is represented by the water, poured in ad libitum through a funnel inserted in an aperture in the upper corner. To the audience it seems as if the ark were being filled with water. In reality, the water simply runs through a pipe, carried through one of the legs of the trestle, and so down beneath the stage. The management of the flood is illustrated in our cut, Fig. 2.

After the flood the exit of the animals from the ark is next to be attended to. Opening windows in its front, a quantity of animals and birds are taken out as shown in Fig. 3. Ducks, chickens, pigeons, cats, dogs and a pig are removed and run around on the stage or fly about, and it is wondered how so small an inclosure could contain such a collection. It is also to be observed that none of the animals are wet—the water has not reached them. More, however, is to



THE LADY TENANT OF THE ARK.

follow, for the exhibitor now lets down the front, and a beautiful Eastern woman, Fig. 4, reclines gracefully in the center of the ark, which has only room enough to accommodate her. Where the animals came from, and how they and the woman could be found in the ark, which, when opened before the audience, seemed com-

pletely empty, and how they escaped the water, are the mysteries to be solved.

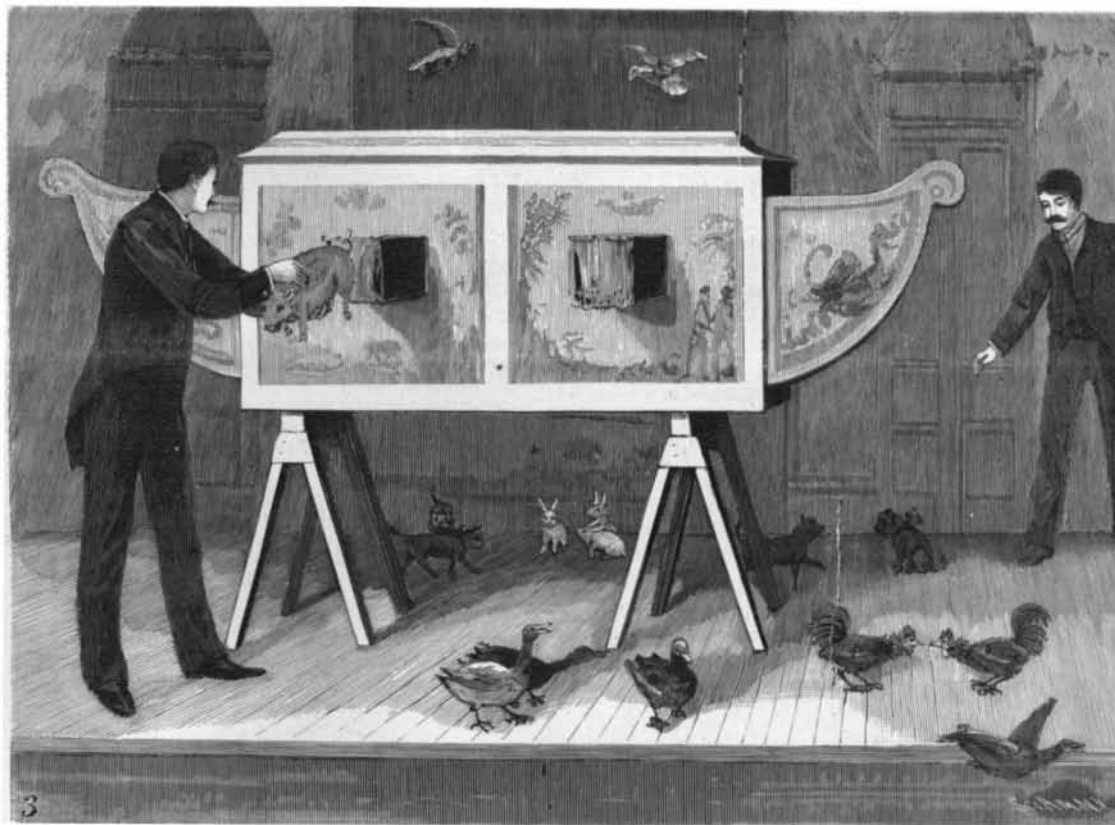
Our cut, Fig. 5, completes the explanation. The ends which are swung up and down in the preliminary exhibition of the ark are the receptacles which accommodate the animals and birds. They are stowed away in these, are swung up and down with them, and are taken out through apertures in their fronts.

The woman, the other tenant, is fastened originally to the back lid. When the ark is opened for inspection, this lid is swung down, ostensibly to enable the audience to see through the ark—in reality to prevent them from seeing through the illusion. For, as stated, it is swung down before the front is opened, and as it goes down the woman goes with it, and remains attached to it and out of sight of the audience, who only see the rear side of the door as it is lowered. Fig. 5 shows the rear view of the ark when open, with the woman in place on the rear lid, and also shows the animals in place in the side compartments.

The illusion is exceedingly effective, and is received with high appreciation by the audience. To those who understand it, the performance is of heightened interest.

Roentgen Photography.

A systematic study of the transparency of different substances to the X rays has been made by Maurice Meslans, whose paper appears in Comptes Rendus. He found that carbonaceous organic substances containing only carbon, hydrogen, oxygen and nitrogen were relatively transparent; that sulphur, iodine and inorganic substances generally were opaque, and that the introduction into the molecule of an organic compound



TAKING OUT THE BIRDS AND ANIMALS.

of one or more atoms of sulphur, iodine or similar inorganic element produced opacity. What is very interesting is that this affects such compounds as sulphates. Thus the sulphates of the alkaloids were opaque on account of the sulphur in the sulphuric acid radical. Therefore the opacity of the bones is to be attributed to their mineral or inorganic constituents. Iodine proved one of the most opaque of all the elements tested. This would suggest injection with iodine solution as a means for photographing internal cavities.

From Edison's laboratory comes the announcement that calcium tungstate has high fluorescent power for X rays, being far superior to the barium platino-cyanide.

The University of Pennsylvania is a claimant for the honors of having taken the first X ray photograph. It was taken on February 22, 1890, was obtained accidentally, and was treated simply as inexplicable, and nothing further was done.

An interesting surgical case is reported from McGill University, where a bullet was located in a man's lower leg, between the tibia and fibula, and was successfully removed. The photograph confirmed the diagnosis, as the bullet had been located by the surgeon, Dr. Robert C. Kirkpatrick. A wire was wound around the leg near the wound to give a base for measurement.

Some interesting results were obtained by Mr. Alexander Macfarlane, who photographed endways a quan-

tity of nails driven into a board. The radiating direction of the shadows showed conclusively the radiant action of the rays. Experiments in refraction and reflection of the rays were definitely negative.

Several investigators—Swyngedauw, Borgman, Gerchun—have tried the effect of X rays upon electric discharge between electrodes. The rays were found to greatly increase the sparking distance. Translations



THE FLOOD.

of their papers appear in the London Chemical News.

A paper by Drs. Houston and Kennelly is devoted to the work in the Edison laboratory, and gives the working factors and conditions. Thin walled tubes of German glass with inner and outer electrodes in parallel proved the best. Roughly speaking, the time of exposure was found to vary with the square of the distance of the tube from the plate. Long distance, with necessarily long exposure, gave the sharpest photographs.

Elihu Thomson has been working on the problem of obtaining stereoscopic effects. The object is to palliate the inherent defect in the process, which is its inability to give anything better than silhouettes. He finds that platinum in the tube acts to improve the vacuum, and suggests a third platinum electrode. When not in use, this would occlude gas; when heated by use, it would give off gas. Thus a means of adjusting the vacuum would be provided, the platinum electrode only being used to modify the exhaustion.

Nikola Tesla has obtained some remarkable results. He has produced strong photographs at forty feet from the Crookes tube. This has involved the necessity of specially protecting his stock of plates, though he keeps them sixty feet distant from the scene of his experimenting and not even on the same floor. He has used a tube with a single terminal.

He also claims to have proved that about two per cent of the rays can be reflected from a glass plate.



THE MYSTERY EXPLAINED.

It was set at an angle of 45° with the axis of the incident rays and eight inches distant. The photographic plate was at the end of a thick copper tube a foot long.

The axis of this tube was placed at 90° with the axis of the rays.