

as it is quite possible to receive a severe shock from this machine. The description of this dynamo, in connection with scale drawings, will be presented at an early date in the SCIENTIFIC AMERICAN SUPPLEMENT, together with the various methods of connecting the wires of the field magnet, and points in regard to external circuits. The results of dynamometric and electrical tests will also be given.

EXERCISES IN PRESTIDIGITATION.

I recently had an opportunity of being present at some amusing experiments of a prestidigitator, who was good enough to let me into the secret of his most curious tricks for the benefit of the readers of *La Nature*. Although it merely concerns the question of a deception of the eye, I shall make known the means employed for changing ink into water, or, rather, for really making credulous spectators believe that ink can be so changed.

The prestidigitator places upon a table a glass half full of a black liquid that has every appearance of being ink. He shows the spectators a white card, dips it into the glass, and takes it out stained with black (Fig. 1, to the left). This done, he conceals the glass under a napkin or handkerchief; then he suddenly removes the latter, and the glass is seen to contain a clear liquid, which is water (Fig. 1, to the right). This trick excites very great astonishment when it is well performed; but nothing is easier than to repeat it.

Pure water is poured into a tumbler, and the lower part of the latter is lined with a strip of black cloth, flannel or cashmere, up to the level of the liquid. At a certain distance off this gives the water every appearance of being ink. Previous to this a card has been prepared by coloring a third of one of its sides with black ink. When this card is shown to the spectators, it is presented to them white side foremost. After it has been dipped into the alleged ink, it is turned around so as to show the inked surface, and it then appears as if it had really been immersed in ink.

Then the glass is covered with the fabric, and the latter is inserted into it far enough to allow the fin-

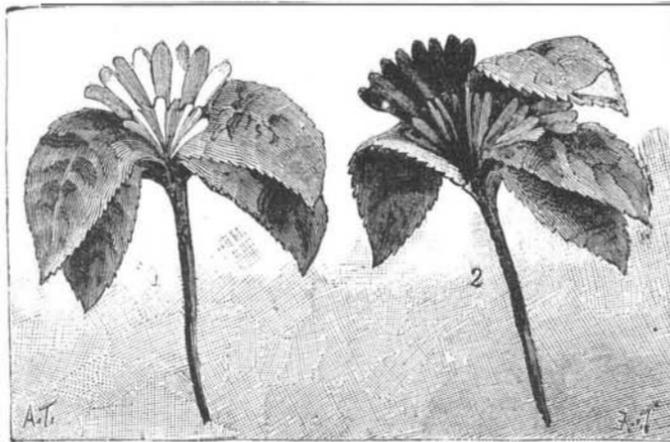


Fig. 2.—THE MAGIC FLOWER.

you will obtain a red liquid having the appearance of wine. Pour into the mixture a solution of hyposulphite of soda, and you will obtain a milk-white liquid, and the wine will seem to have been converted into milk. Put some iodide of potassium into an aqueous solution of a salt of mercury (the bichloride, for example), and you will have a red precipitate of iodide of mercury. An excess of the reagent dissolves the precipitate, and the color disappears. This latter experiment is very curious, since the two liquids have the appearance of water. While we are on this subject, we may mention, in conclusion, the curious tri-colored artificial flower that a toy manufacturer annually brings out (Fig. 2).

To the left of this figure (No. 1) we see a white flower. This, by an abrupt movement of the arm, is rendered red, and then by another movement blue. The white flower, which is of thin paper, is folded like a fan, and is placed between two flexible leaves, that are provided at their upper extremities with a small piece of lead. By a dexterous movement the green leaf is raised and the white flower is folded under its weight, and a red flower makes its appearance on one side and a blue one on the other. If the motion be quick, the eye cannot discern the means that are employed to effect the transformation, which may be regarded as an amusing optical experiment. —*La Nature*.

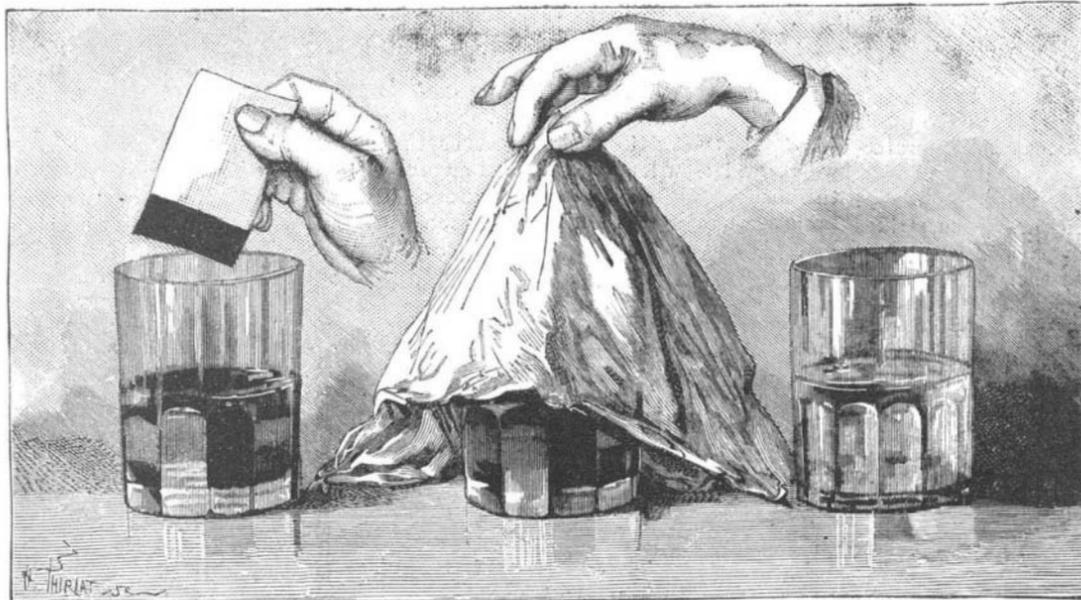


Fig. 1.—INK CHANGED TO WATER.

gers to grasp the black lining and quickly remove it, and thus make the black liquid appear as water.

This experiment shows with what facility certain mystificators can practice deceit when they present their experiments as being under the influence of supernatural agents.

Experiments of the same nature may be more scientifically performed by means of chemical precipitates. Add tincture of iodine to crystallized acetic acid, and

this vast desert. If a bear is discovered on floating ice, it will usually jump into the water on the approach of the boat, in order to reach the shore or a larger field of ice, and this is the time when he can be most easily killed. Rowed by strong arms, the boat will soon overtake the fugitive; but it should be kept at a proper distance from him, so that he can be shot by one of the occupants of the boat. The capture is not always an easy matter, however. The Scotchman

THE POLAR BEAR AND SEALS.

On the long stretches of ice-covered coast in the polar regions, the largest beast of prey of the North—the white or polar bear—lives undisturbed by all other animals, seldom meeting even the walrus or seal hunters in



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