

PAINE'S LIGHT.

The editor of the *Springfield Republican*, after a visit to Worcester and an examination of Mr. Paine's apparatus for decomposing water, says:—"It has been claimed, heretofore, by Mr. Paine, that water was a simple substance. The manner by which he arrived at this conclusion, was a very natural one. By communicating with the water with one pole of his apparatus, he obtained all hydrogen, by the other, all oxygen. The natural conclusion would be that if decomposition really took place between the two united gases of which water is composed, the two liberated gases would both manifest themselves. They did not thus manifest themselves, and the conclusion was that the water was all resolvable into oxygen or hydrogen, depending upon whether positive or negative electricity were used in the process.

A day or two before our visit to Mr. Paine, he had been visited by Prof. Doremus, of New York, who offered him a solution of the mystery, which Mr. Paine immediately admitted the reasonableness of, and which, we doubt not, will do away with some of the prejudices conceived by scientific men toward Mr. Paine—the claim that water was a simple substance, being in antagonism with well established facts. Prof. Doremus supposes that decomposition really takes place, and that the oxygen, combined with the hydrogen, is all liberated, but that it immediately unites with the hydrogen in the undecomposed water, forming the per oxide of hydrogen. This is the only rational solution of the difficulty, and is, doubtless, the true one. It will thus be seen that after carrying on decomposition for any length of time, what is left in the water jar is not pure water, and the necessity of frequently replacing the fluid, in practical use, becomes obvious. Mr. Paine says he is not disposed to adhere to a theory, after he gets a better one, and we should judge that he had given up the one to which he was so naturally led.

AMERICAN ART-UNION.

The distribution of the pictures of the American Art-Union took place at Tripler Hall Dec. 20th. The Mayors of New York and Brooklyn were selected to preside over the drawings. The vast hall was filled with an audience of nearly four thousand people, many of whom were directly interested in the rewards of chance. The Free Gallery is one of the most popular and beneficent features of the Art-Union here every citizen and stranger is welcome to study the works of genius and of art.

The number of members for 1850 were 16,310, from whom the committee received \$81,550, of this amount \$16,225 have been devoted to the production of six engravings of which each member receives a copy.

During the year the committee have purchased four hundred and twenty-four paintings, twenty bronze statuettes, and six bronze busts of Washington; all of which were by American artists, at an aggregate of \$43,120. There were also fifty copies of outlines by Washington Allston, four hundred and fifty medals and sixty proof impressions of the large engravings from two of Trumbull's most celebrated paintings numbering in all one thousand works of art; all of which have gone before the public in different parts of the Union thereby tending to extend the desire to cultivate a taste for the Fine Arts.

RAILROADS IN PRUSSIA.—There are in Prussia 21 railroads, about 1,100 miles in all, costing about \$101,000,000, using 46 locomotives, 1,254 passenger cars and 6,018 freight cars. In 1849 they carried 8,597,946 passengers and 33,313,795 cwt. freight. The receipts were \$7,863,000, and the expenses a little more than half that sum. The profits were 3.82 per cent.

—Long and light buffing is best for daguerreotype plates.