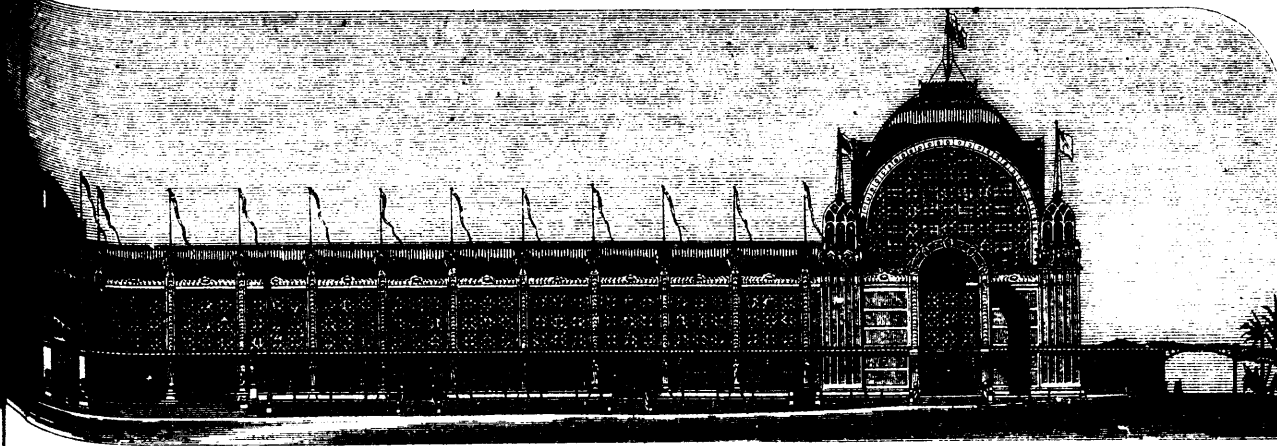


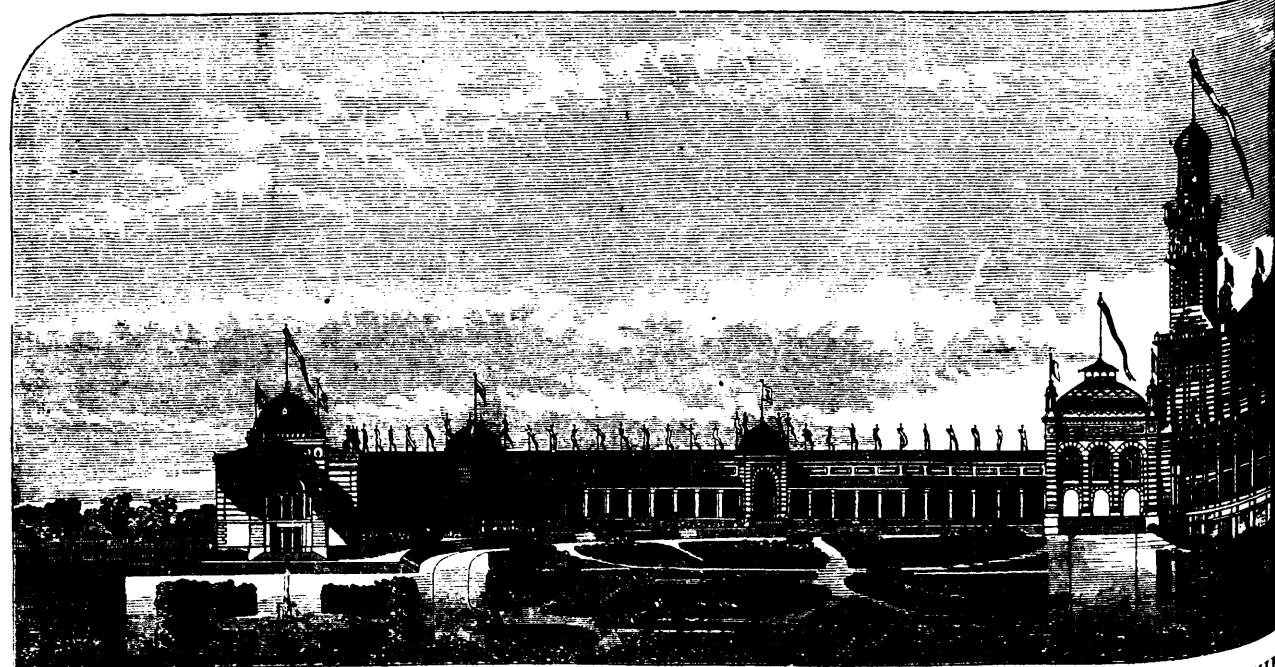
# THE PARIS UNIVERSAL EXHIBITION OF 1878.



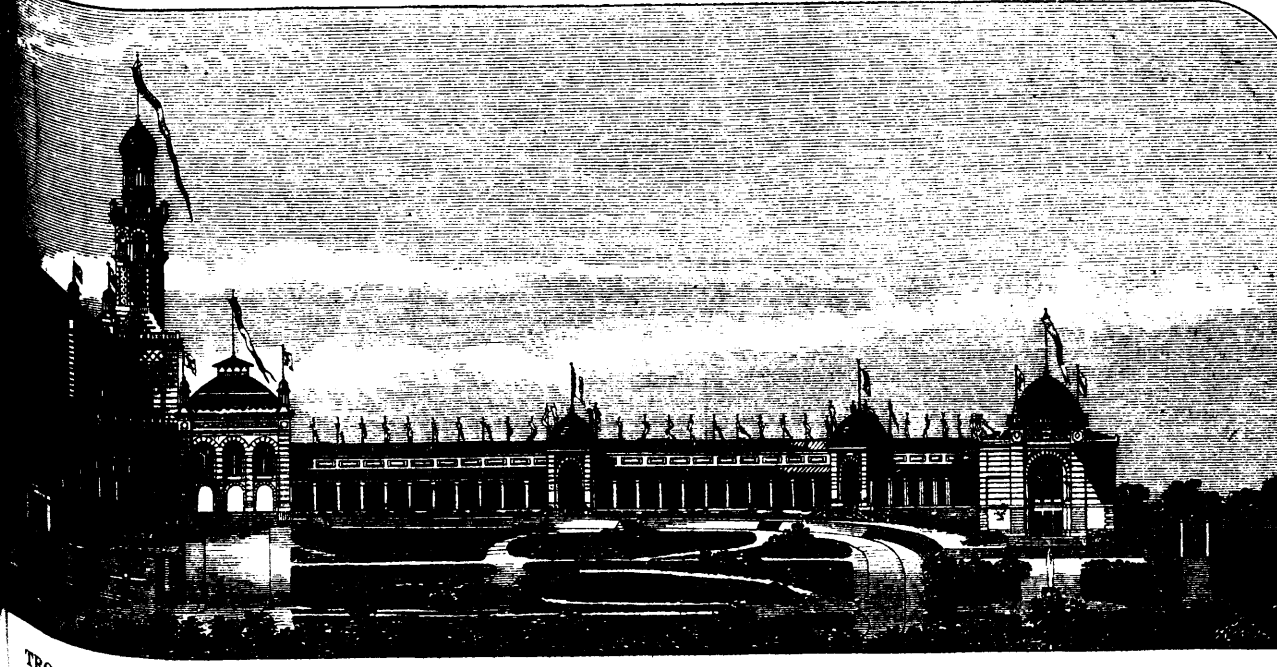
ENTRANCE TO THE MAIN



VESTIBULE OF EXHIBITION BUILDINGS.



FACADE TO THE



TROCADERO PALACE.

We regret that our limited space will not allow us to supply a description of these partitions of the building, but it would not be of particular importance to the generality of our readers. The illustrations, however, will give an idea of the general appearance of the building and its magnitude, particularly to those who saw the Centennial Exhibition Buildings last year.

**EUROPEAN PRODUCTION OF COAL TAR.**—The statistics of Great Britain show that the annual production of coal-tar in that country is 130,000 tons, in Belgium 10,000 tons, and in France 35,000, of which Paris alone produces 25,000 tons. In regard to the value of this incidental product, it must be stated that before the invention of the manufactory of aniline colors from coal tar, it was worth from \$1.20 to \$2 per ton, but at present in France it is worth about ten times that amount, so that a substance formerly an incidental product of little value, has become so valuable as to be now a considerable item in the economy of gas manufacture.

**HOW TO ETCH ON STEEL.**—The clean plate must be covered with an even film of wax, either applied while the plate is uniformly heated, or dissolved in alcohol and flowed on the warm plate. The etching fluid may be made as follows: Pyroligneous acid, 4 ozs., alcohol 1 oz., nitric acid 1 oz.; by measure. Or use iodine 1 oz., iron filings  $\frac{1}{2}$  drachm, water 4 ozs. The lines are cut through the wax with a fine steel point, so as to leave the metal surface bare under the lines. The etching fluid is then poured on, and removed as soon as the metal is sufficiently etched.

**MARINE GLUE.**—Dissolve 1 lb. best caoutchouc (gum rubber) in 4 gallons of pure gas naphtha, with frequent agitation. After ten or twelve days add 2½ lbs. of shellac, in finest powder, and allow to stand for about a week in a well stoppered flask. The mixture must then be carefully heated in an iron vessel having a discharge pipe at the bottom, and, when the whole has become liquid, drawn out upon large metal slabs to cool. When required for use it should be heated to 258° Fah. (best in an oil bath), and applied with a brush. It forms, when properly prepared, one of the strongest and most insoluble cements known.